MAY 1961

National SAFETY NEWS

A NATIONAL SAFETY COUNCIL PUBLICATION

Safety Gets a Lift

announcing

the introduction of a steel toe for a shoe YOU would wear

NEW STYLE 300

for the first time a safety toe for real dress or casual shoes

Gone is the day when the majority of safety shoes are too broad in the toe for sports or dress wear.

The brand new Style 300 safety steel toe is tapered, smarter looking — brings safety shoes into step with men's dress shoe design.

Dress or casual shoes with this toe are equally protective for plant wear or for such precarious home jobs as using the power lawn mower.

Sleek — smart — yet SAFE, that's the new Style 300 safety steel toe. Remember — it's made from the best steels — austempered for your assurance of maximum protection.

See your safety shoe supplier about a pair of dress shoes with the new Style 300 steel toe for display in *your* plant. Your men will love them, too!

The new style 300
for dress or casual shoes
now being used by
your favorite shoe manufacturer

Safety Box Toe Company

812 STATLER BUILDING · BOSTON

CIRCLE 1 ON READER CARD

ON and OFF the job!

There's nothing quite like HY-TEST's series of "casuals" in safety shoes today. All are dressy in appearance, light in construction, comfortable to wear, and offer the sure protection of the famous Anchor Flange Steel Box Toe. Write today for complete information on HY-TEST Nok-a-bout Safety Oxfords and the entire HY-TEST Line... HY-TEST SAFETY SHOES, Division, International Shoe Company, 1509 Washington Ave., St. Louis 66, Mo.... 2224 N. Tenth St., Philadelphia 33, Pa.

H535 (above)... Smoked buc upper treated with "SCOTCHGARD" leather protector—resists oil, repels water, brushes clean; brown Resist-Oil Cellular Crepe Grit sole and heel; cleaner pad included... Sizes: B... 7-12; C... 6-12; D, E... 5-12.

H546... Same as H535 in Grey buc.

H537... Spice tan softie glove 3-eyelet moc-oxford; soft leather lining; Neoprene Cellular Crepe sole and wedge heel; Cushion Insole... Sizes, B... 7-12; C... 6-12; D, E... 5-12.

H946... Brown glove Chukka shoe; oil-resistant Cellular Crepe Grit sole and heel... Sizes: B... 7-12; C... 6-12;D, E, EEE... 5-12.

H853... Women's smoked leather gore pump; Nitrocrepe Saf-Tred sole and heel; cushion heel and arch pad... Sizes: AA... 5-10; A... 4½-10; B... 4-10; C... 3½-10.

HY-TEST

NOK-A-BOUT Safety Oxfords

CIRCLE 4 ON READER CARD

National SAFETY NEWS

A NATIONAL SAFETY COUNCIL PUBLICATION

VOL. 83, NO. 5 MAY 1961

EDITORIAL

FEATURE ARTICLES

FIRE PROTECTION—a new NSNews department

DEPARTMENTS

SPECIAL TECHNICAL SECTION

NATIONAL SAFETY COUNCIL

Chartered by the Congress of the United States

HOME OFFICE
425 North Michigan Avenue, Chicago 11

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PUBLICATIONS DEPT. MANAGER: Jack Horner

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DIRECTOR: Ralph Moses
COVER: William Wendland
PHOTOGRAPHER: James B. Lehman

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THE COVER

Fork lift drivers at Crouse-Hinds, Syracuse, N.Y., go through a tough training program to sharpen their judgment and instill in them the need for safe vehicle operation. Here, judges watch driver move his fork lift through aisle mock-up.

40,000 copies of this issue were printed

WHICH IS THE SAFETY SHOE ?

Can't tell from the outside. They're the same cool lightweights men buy for summer dress or leisure wear. But here's the inside story: There's a rugged Lehigh steel safety toe in each one of them! Result? All three are light, comfortable, good-looking shoes protected by this famous safety feature. Recommend Lehigh Safety Shoes for all your personnel. It's the lowest-cost insurance in the world.

LEHIGH

SAFETY SHOE COMPANY/EMMAUS/PA.

CIRCLE 6 ON READER CARD

EDITORIAL

1,001 EDITORS

Item 1. Among the features in the March issue of the NEWS was an article on building safety into new plants by Robert L. Moore, superintendent of engineers for Lumbermens Mutual Casualty Co., and general chairman of NSC's Construction Section. (Bob Moore is one of 102 leaders in construction safety who serve on the executive committee of the Construction Section. He is one of more than 1,300 volunteer safety men from all parts of the United States and Canada who devote time and energy to Council activities. Many of these men are frequent contributors to the NEWS.)

Item 2. The February issue of the NEWS carried a feature article on motivation by Earle S. Hannaford, safety engineer for American Telephone and Telegraph Co., and a vice chairman of the Council's Industrial Conference. (The Industrial Conference includes 160 national leaders in industrial safety. Many of these men have authored articles for the NEWS.)

Item 3. In the April issue of the NEWS there appeared a feature story on the all-around safety program of Du Pont's Kinston plant. We learned of this excellent story from Du Pont's safety manager, J. S. Queener. The Kinston plant is one of 30,000 locations that have memberships in NSC. Council members include the most safety-conscious plants on the continent, employing some 20,000,000 workers. Member firms are an important source of material for the pages of the NEWS.

Item 4. An article in the January issue of the NATIONAL SAFETY NEWS tells how the Hamilton (Ohio) Safety Council works with 50 plants in Southern Ohio on off-the-job accident reports. We learned of this project from Russell Hicks, manager of the Hamilton Safety Council. (Hamilton's council is one of 80 state and local councils chartered by the National Safety Council. Through NSC's 18 full-time field staff scattered throughout the 50 states, NEWS editors maintain contact with these and 200 other safety councils throughout the land.)

Item 5. On page 10 of this issue of the NEWS you will find a new monthly column on "Fire Tips" written by Marshall Petersen of the Council's Industrial Department. Petersen is one of a score of safety engineers on the Council staff. Six members of the Industrial Department are regular contributors to the NEWS. They and the others are constantly on the lookout for possible NEWS features in their correspondence and travels. During 1960, they clocked 155,000 miles.

Conclusion: The NATIONAL SAFETY NEWS is truly a joint effort – the result of the work of thousands of individuals and organizations. To keep safety men up to date on the latest news in their profession, we are dependent on a constant stream of information moving into our hands, so that we may digest it and disseminate it, and thus fulfill the Council's function as the clearing house for accident prevention.

We know that we are dependent on the efforts of many who do not work at 425 North Michigan.

It is only fitting that we thank our anonymous editors.

Keeps feet in a cool, dark, safe place

Feet have to breathe too, especially in hot weather, and this new ventilated safety shoe lets them. Its open pores allow air to drift through all day long, carrying off the heat and making life livable during the dog days. Short of wading in a mountain stream, wearing this new ventilated oxford is about the coolest way there is for working feet to spend the hot months. And yet the important Thom McAn protective features have not been left out. It's an all-purpose safety shoe from neoprene heel to steel toe box. And it's built with a tough, butyl leather outsole, manufactured to military specifications. They make a shoe that's a safe place for feet to be in. Cool, too. Style S-4357. Size range is B 8-12, C 7-12, D, E, EE 6-12.

Thom McAn Safety Shoe Division
25 W. 43 St., N. Y. 36

Gentlemen: Please send me the following at once: (Check service required)

- ☐ Details of Thom McAn's sales plans
- ☐ Illustrated list of Thom McAn Safety Shoes
- ☐ Set of safety posters

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FIRM_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____

Thom McAn SAFETY SHOES

A DIVISION OF MELVILLE SHOE CORPORATION

VOICE of the READER

Comments on topics of current interest are invited. They need not agree with the views of the editors

Praises Our Brevity

BUFFALO, N.Y. Brevity is not only "the soul of wit" but, I think many times, the essence of communication. Often more can be conveyed in a couple of paragraphs than in a multitude of pages.

The article found on the bottom of page 7 in the March edition of the NATIONAL SAFETY NEWS is an excellent example of a wealth of pertinence packed into a small space. Mr. Robert Gilmore is to be highly praised for the relevancy of his *"The Best Incentive."*

In a day and age in which we safety men hear so much about motivational research, human relations, contests, award systems; in a culture in which a high premium is placed upon collective decision (committees), it is refreshing to hear now and then from those prophets of our profession who fearlessly minimize the importance of the gimmick and simply say, "Look, make safety a part of good operational procedure and good supervision and you've got it!"

Our appreciation to Mr. Gilmore for his thoughts and many thanks to the editor for printing them.

— D. J. HOPWOOD
Safety Director
Becco Chemical Division
Food Machinery and
Chemical Corporation

Reporting Device

ALLIANCE, OHIO. On page 62 of the February 1961 issue of the NATIONAL SAFETY NEWS an article appeared which contained a disabling injury accident report device.

This device was evidently developed by the National Association of Refrigerated Warehouses. I would like to contact this organization to see if this item is for sale. Would you please send me their address?

— M. L. KINNEY
Personnel Manager
The Babcock & Wilcox Company

Readers continue to inquire about this device. The address is:
1210 Tower Bldg.
Washington 5, D.C.

Article Drew Inquiries

THREE RIVERS, MICH. Many thanks for your use of our little Safety Dress Campaign story. It may interest you to know that we have had several inquiries from other companies on additional details of our program.

We would appreciate receiving six tear sheets if they are available.

Speaking for our management group here at plant 22, let me say that we all enjoy your fine magazine each month, and wish you continued success.

— ROBERT E. TANNEHILL
Plant Training Supervisor
Paper Container Division
Continental Can Company

— To page 84

RELATIONS

OF ALL our relations, some are preferable to others. Too many ignore or refuse to admit relativity though.

The religion is religion but business is business routine.

The guy who claims "nothing will ever happen to me" but carries hefty insurance.

The strong man at the plant who leaves it to the little woman at home.

The guy who says wearing goggles is sissy but wears a deodorant.

The foreman who hasn't time for safety but complains of all the time spent preparing injury reports and investigations.

The gal who won't wear a hair net but straps her hips in with 10-ply canvas.

The guy who smokes "thinking men" type cigarettes but forgets to look both ways at the intersection.

The fellow who uses toothpaste which makes his breath kissing sweet, then lets himself get banged up so only his Mother would kiss him.

The guy who wants the cop to protect his house and leave him alone on the road.

The devoted family man who drives ninety per on the highway.

The guy who demands his wife stay slim and desirable though he gets fat and slobby.

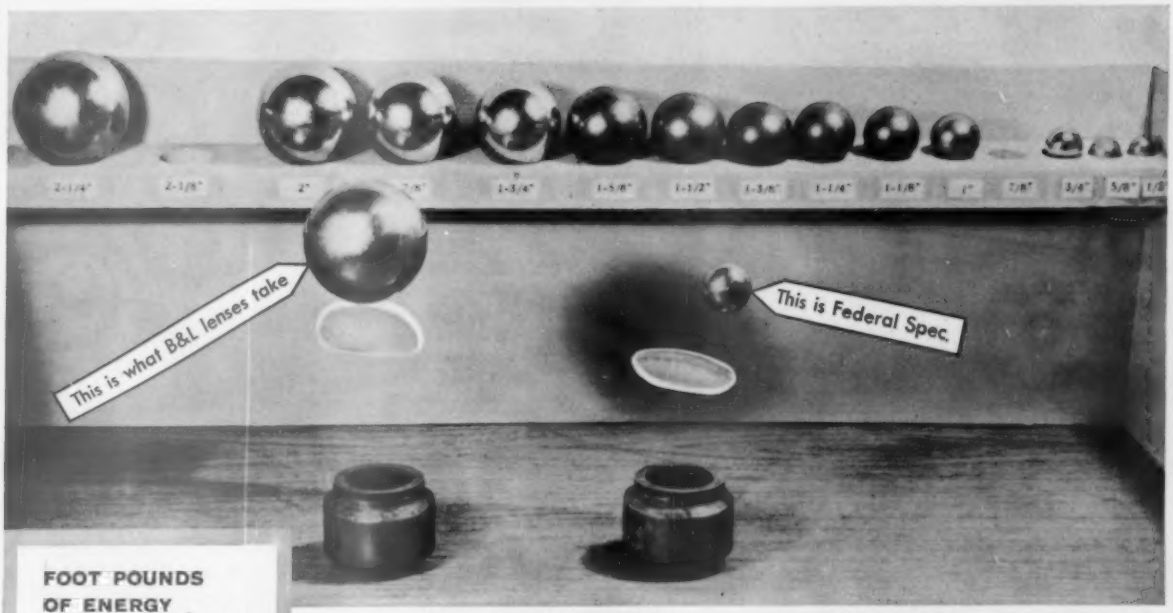
The kids who are supposed to use good English despite what they hear from adults and TV.

The guy who gushes at the neighbor ladies but growls at his spouse.

The typical anomaly of the age is the church supporter who drives like a heathen, browbeats those he supervises while letting his kids run wild, and abhors excesses in alcohol while remaining 40 pounds overweight.

Anybody you know?

ROBERT D. GIDEL



GET *at least* TWICE THE EYE SAFETY YOU PAY FOR

Bausch & Lomb Bal-SAFE lenses twice as tough as Federal Standard

In the picture above, you see two bouncing steel balls stopped in mid-air by the high speed camera. The balls were dropped simultaneously from a height of more than 4 feet. Federal Standards Bureau specification for safety lens impact resistance requires exactly this test, using the ⅞" diameter steel ball you see on the right. Truth is, B&L Bal-SAFE lenses withstand impact from 2 to 10 times greater than Federal specification.

By B&L standards, every lens must withstand the shock of a 1⅛" diameter steel ball, or twice the impact of the ⅞" ball. This extra safety is engineered through a special B&L lens toughening process that adds *not a penny of extra cost to you.*

Ask your safety man: "how much eye protection are we now getting—and are we getting all we might bargain for?"

A representative from one of the 314 suppliers of B&L Safety Products in U.S. and Canada will show you the many pluses in protection awaiting you all through the B&L lines—and vision screening for safer, more productive use of eyes on the job by means of the famous B&L Industrial Ortho-Rater.

Why shouldn't superior eye protection be an achievement of Bausch & Lomb! World leaders in ophthalmic research, with the only glass plant in the Western Hemisphere devoted exclusively to manufacture of optical glass, Bausch & Lomb leads in all forms of eyesight conservation.

Perhaps of special interest to you right now is a new portfolio of facts available for all persons concerned about eye safety. Send coupon for your free copy.

Protection-PLUS Safety Products

protection + economy + worker acceptance

BAUSCH & LOMB SINCE 1853

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CIRCLE 8 ON READER CARD

Fire Tips for The Safety Man

By MARSHALL E. PETERSEN

Marshall E. Petersen is the consultant fire protection engineer for the National Safety Council's Industrial Department. He has a B.S. degree in safety and fire protection engineering from Illinois Institute of Technology. Petersen is a member of the American Society of Safety Engineers and the Greater Chicago Safety Council. Before joining the NSC staff, he was supervisor of safety and fire protection, Allied Chemical Corp.; industrial hygienist, Illinois Department of Labor; and safety engineer, Argonne National Laboratory.

Sprinkler Head Spacing Increased

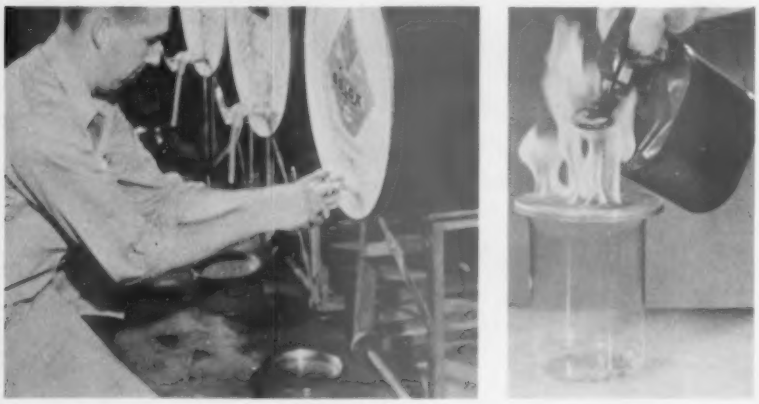
A change in sprinkler-installation requirements recently has been adopted by Factory Mutual. These changes in spacing and installation requirements result from a series of fire tests conducted at the Factory Mutual Engineering Division. The simplifications will mean less costly and more effective installations.

Before 1954, sprinklers in ordinary-hazard occupancies were designed to cover from 80 to 100 sq. ft. per head, depending on the type of building construction. With the introduction of the new spray sprinkler, spacing requirements were increased in 1954 to vary from 90 to 130 sq. ft.

Discharge characteristics of the spray sprinkler have been found effective. The entire sprinkler industry is manufacturing heads of this design, known as the standard sprinkler head. The present change in spacing requirements has been to adopt the 130-sq.-ft. spacing for all types of construction. In addition, the stagger position of sprinklers will be needed only under special conditions. This will simplify installation.

Millions of sprinklers in existing systems will continue to give excellent protection. Unless local conditions are unusual, there is no need to replace the old-type sprinklers. Whether new or old, adequate maintenance is most important.

Safe Controls For Handling Flammable Liquids



Film sequences show drum room safety techniques and effectiveness of metal flame arresters.

Flammables Engineering is a 16mm sound and color motion picture recently developed by the Protectoseal Company. This film is designed for use by industrial companies, insurance agencies, state and municipal organizations, and educational institutions.

Its purpose is three-fold . . . to demonstrate potential hazards in the mishandling of flammable liquids . . . to educate personnel in correct techniques and methods of working with flammable or hazardous liquids . . . and to stimulate interest in and cooperation with the work of safety departments in setting up safe flammables handling procedures for their operations.

Running time of the film is 26 minutes. It is available from the Protectoseal Company, 1920 S. Western Ave., Chicago 8, on a free loan basis.

Fire Facts

Every 35 seconds a fire breaks out in some city of the United States. During 1959, there were 906,135 reported fires in cities of 2,500 or more in population.

Almost one-fourth of these fires are caused by matches and smoking. Electricity and electrical equipment is the second most common cause of loss, followed by lightning.

For the third consecutive year, the nation's fire losses exceeded one billion dollars during 1959. Dollar value of property damaged or destroyed by fire during 1959 was almost ten million dollars under that of 1958 and was the first decline since 1950.

A rapidly expanding economy – measured by production, expenditures, and personal income – has resulted in greatly increased values of goods and structures subject to loss. Population in the United States is also increasing steadily. Since most fires are the result of human failure, the expected population growth will increase the number of fires.

Safety Facts Your Employees Should Know...

and can read about in the next two issues of

HOME SAFETY REVIEW

SPRING ISSUE

Hazards of Sliding Glass Doors. Some are now made of such thin, fragile glass that they shatter at the slightest blow, as many unfortunate homeowners have discovered. Solution: shatterproof glass.

What Drinking Drivers Don't Know. The carefree driver who has had just a few drinks is more dangerous than the sodden drunk.

How to Use the Telephone in an Emergency. How to save valuable seconds by knowing who to call, what to say, how the operator can help.

Lifesaving Tips from Firefighters. Firemen point out six vital safety rules: never leave children alone; don't smoke in bed; get out of a burning building immediately; never enter a burning building; don't jump from a window; plan your escape from fire.

Don't Invite Snakebite. How to avoid snakes, what to do if you encounter one, and what to do if you are bitten.

What Would You Do if Your Child Ate Poison? Practical emergency treatment for poisoning, including answers to such questions as: should you give an antidote? should you make the child vomit? should you call the doctor first?

Spring Check-up for Ladders. How to examine your ladder to see if it is safe for use. A few minutes of caution that can avoid serious injury.

PLUS SHORTER FEATURES:

What to Do in Case of a Tornado.
Ten Top Safety Cartoons from the Saturday Evening Post.
Hazards of Using Lacquer Sprays in the Workshop.
Do You Drive Like a Champion?

SCHEDULED FOR SUMMER ISSUE

Exciting New Ways to Teach Your Child to Swim. The fun-way through use of games. Photos and detailed instructions.

Poison the Bugs, Not Yourself. Constantly coming on the market are new pesticides with strange names and ingredients. Some can be dangerous. Here's what you should know to handle them safely.

Scuba Diving: the Fun and the Dangers. This exciting sport that has captured the nation's interest can be hazardous, even for the experienced diver. Safety pointers, especially for the novice.

Are You Emotionally Fit to Drive? Psychologists say your attitudes determine whether or not you're heading for an accident. What are emotional danger signs? How can you spot them and avoid them.

Five Reasons to Beware a Power Mower. These five reasons are five different personal stories. All are tragic, and all concern the effect a power mower accident has had on someone's life.

"I Didn't Know the Gun Was Loaded." So goes the pathetic cry each year of dozens of persons who accidently shoot friends and relatives. The moral: never keep a loaded gun in the house.

PLUS SHORTER FEATURES:

It's Simple to Install Seat Belts.
Know Your Buoys.
What Would You Do in This Emergency?
Poisonous Plants in Your Back Yard.

HOME SAFETY REVIEW . . . the new family safety magazine that people like to read. Write for information on special low bulk subscription rates, and request a FREE SAMPLE COPY.

HOME SAFETY REVIEW

Published quarterly by the
NATIONAL SAFETY COUNCIL
425 N. MICHIGAN AVE., CHICAGO 11, ILLINOIS

THE SAFETY VALVE

Nothing human is alien to me
—TERENCE

Oasis for Oldsters

DOWN in the Arizona desert about a half-hour's drive from Phoenix, some 3,000 sun-kissed senior citizens are enjoying the gold-plated years in a man-made garden of Eden. If you can believe the publicity blurbs, they never had it so good.

Only folks over 50 are admitted to residence in Sun City. Junior citizens are welcome to visit the community on credentials of good behavior.

The promoters boast that there is no patter of little feet in Sun City. No baby sitting for grandpa and grandma. No nurseries, no public schools, no PTA, no young lovers, no juvenile delinquents.

No schools means lower taxes. And in this hand-picked community one might assume there would be no need for a jail. The only reason for having a police force would be to keep outsiders from contaminating the inmates.

Only people in at least moderately comfortable circumstances are welcome in Sun City, so there is no need for an almshouse or a Community Fund — unless they want to help the less fortunate outsiders.

Name your favorite recreation or hobby; Sun City has the facilities for it. But unlike some over-organized suburban communities, you can choose your pace. There is no pressure to participate in any activities. Those who wish can sit in deck chairs by the swimming pool and compare symptoms.

With only gals over 50 around, some of the aging males with young ideas might find the scenery a bit monotonous.

Suitable housing for old people is a real problem, but a concentration camp where every prospect pleases is not the ideal place for all of them. Housing with no steps up and down and non-skid bathtubs with built-in hand rails are important. Yet a community exclusively of senior citizens sounds like a cemetery with all the residents above ground.

Sure, I like the company of other gray heads, but I shudder at the thought of being holed up in any place where there aren't any children and young folks. I'd rather have kids cutting across my lawn.

NOTHING so needs reforming as other people's habits.—*Mark Twain.*

The Vanished Victorians

WHAT DID the people of the last century have that we have lost?

We laugh at their leisurely ways and their circumscribed outlook on life. There is something like a sneer in our references to "horse and buggy" days. But there is often a bit of secret envy in our derision.

Things always look better in retrospect but the magic of the horse and buggy days wasn't all mirage. They really had a few things we have lost in the swifter atomic age.

Eighty years ago the world got along very well without many of our modern necessities — automobiles, typewriters, adding machines, radio, TV, and a long list of electronic marvels. An occasional man still finds peace and contentment in emulating Thoreau but most of us are slaves to gadgets and keyed to the present pace.

The Victorian executive didn't have the benefit of our time-saving devices but he was able to make better use of the time he had. Management problems were less complicated. He wasn't interrupted by telephone calls and the day was not one conference after another.

When a salesman called, he'd see him. He didn't say, "Write me a letter." Before Mr. Shole's invention, letters were hard to write — and often harder to read.

So the executive of that period did what his successor postpones as long as possible. He made a decision — yes or no.

Modern devices do save labor — including the labor of making decisions. It's so easy to postpone them.

Here, perhaps is a frequent source of the "nerves" that get people down at times. The confusion of postponed decisions and unfinished jobs, the psychologists tell us, creates tension. And tension is the reputed cause of many a case of headache, insomnia, and ulcers.

So, if we could discipline ourselves to follow the old motto, "Do it now," the consumption of aspirin, bicarbonate, and tranquilizers should take a sharp drop.

Hunt and Peek System

"STREET signs lag far behind highway development," writes Sydney J. Harris, *Chicago Daily News* columnist, who has often been quoted on this page. "Most street signs in towns were put up years ago, for pedestrians, and cannot be read by motorists. Going through a strange suburb recently at night, I had to stop my car at every block, get out, and peer at the corner sign."

He must have been going through Park Ridge.

Carman Fisk

Du Pont "X-12" Flame Retardant protects work clothes against the spread of flame

START: Here, two coveralls are placed over two trays of burning naphtha. Untreated coveralls are on the right; coveralls on left are treated with Du Pont "X-12" Flame Retardant.

AFTER 30 SECONDS: The source of the fire has been removed, but the untreated coveralls (right) still burn. The treated coveralls (left) are only charred, and have stopped burning.

Quite possibly many of your production and maintenance personnel are exposed daily to fire hazards. Now, with Du Pont "X-12" Flame Retardant, you can give them work clothing that doesn't support fire, yet keeps them in complete comfort.

"X-12" is applied to work clothing and uniforms *during laundering*. Garments so treated only char when exposed to flame—and are self-extinguishing once the source of the fire is removed. Because "X-12" still allows the fabric to "breathe", comfort is the same as for an untreated garment—no need for heavier clothes which cut employee efficiency.

DU PONT
REG. U.S. PAT. OFF.

"X-12" FLAME RETARDANT

BETTER THINGS FOR BETTER LIVING...*THROUGH CHEMISTRY*

A growing number of commercial and industrial laundries offer this low-cost treatment. For more details, send the coupon below.

DU PONT FLAME RETARDANT X-12

E. I. du Pont de Nemours & Co. (Inc.)
Industrial and Biochemicals Dept.
Rm. 2545 SN, Nemours Bldg.
Wilmington 98, Delaware

Please send booklet describing the advantages of work clothing treated with "X-12".

*Name*_____

*Company*_____

*Address*_____

*City*_____ *State*_____

CIRCLE 10 ON READER CARD

DIARY OF A SAFETY ENGINEER

With the super's OK to add another man to the safety staff comes a problem: Should the guy be another diamond in the rough like Bert, or college-trained like Lee?

TECH OR SHOP?

Fiction by BILL ANDREWS

MY LONG-SOUGHT permission to add a member to the safety staff for the Project came through.

Behind that memo lay a long struggle between myself and the Project's new superintendent — a struggle which has had parallels in every Project department.

The more I look back on the struggle, the more my respect for the super grows. Coming in new during a time of economic recession, he was duty-bound to look for soft spots in the organization.

His automatic reaction when confronted, as he was from many departments, with requests for staff expansion was to suggest staff cuts. But he did not move to make such cuts hastily. Instead, department heads were given time to present counter-arguments.

On the other hand, he was not easily swayed by such arguments. In the end, only departments which could present a good case and did so forcefully and stubbornly avoided the axe. And only two departments have been given the additional staff they asked for.

The safety department was one of the two — both because our case was good and because I battled hard. Of 12 major department heads, two have been encouraged to resign in the last month—one because he continued to demand preferential treatment for his department without being able to back up his demands with sound arguments, the other because the super felt he didn't fight hard enough to defend his department's minimum needs in staff.

So the battle is over, and I've just held a conference with my two assistants, Lee and Bert. I asked their opinion about the selection of a junior member of the department.

Lee, my senior assistant, is like me, a Tech graduate. He has a good engineering mind — sound in math, creative in design, conservative in analysis. He can take a technical problem, wrestle with it, and often come up with a truly imaginative solution. His years with me have drilled into him the essential elements of safety engineering and particularly the symptoms of danger.

In a conference with management people, he wins respect by his thorough preparation and clear-headedness, his quiet reasonableness, his thorough devotion to accident prevention. He is less successful in dealing with the lower echelons of supervision, because it is not easy for him to simplify his arguments for a man with a limited technical education and vocabulary.

He is a poor speaker at an inspirational rally, but a good teacher in a class situation, even a class of low-education employees.

Bert is almost his exact opposite. He has a high school diploma and some night school courses in math and engineering, plus more than a year with me. He is easy, outgoing, warm, friendly and, when need be, stubborn in his relationships with supervisors and employees.

He is almost Lee's equal as an inspector, but he simply can't handle a technical engineering problem of any complexity. Yet he is Lee's superior in the whoopla type of public speech, in poster selection, and in knowledge of the mind of the man on the shop floor.

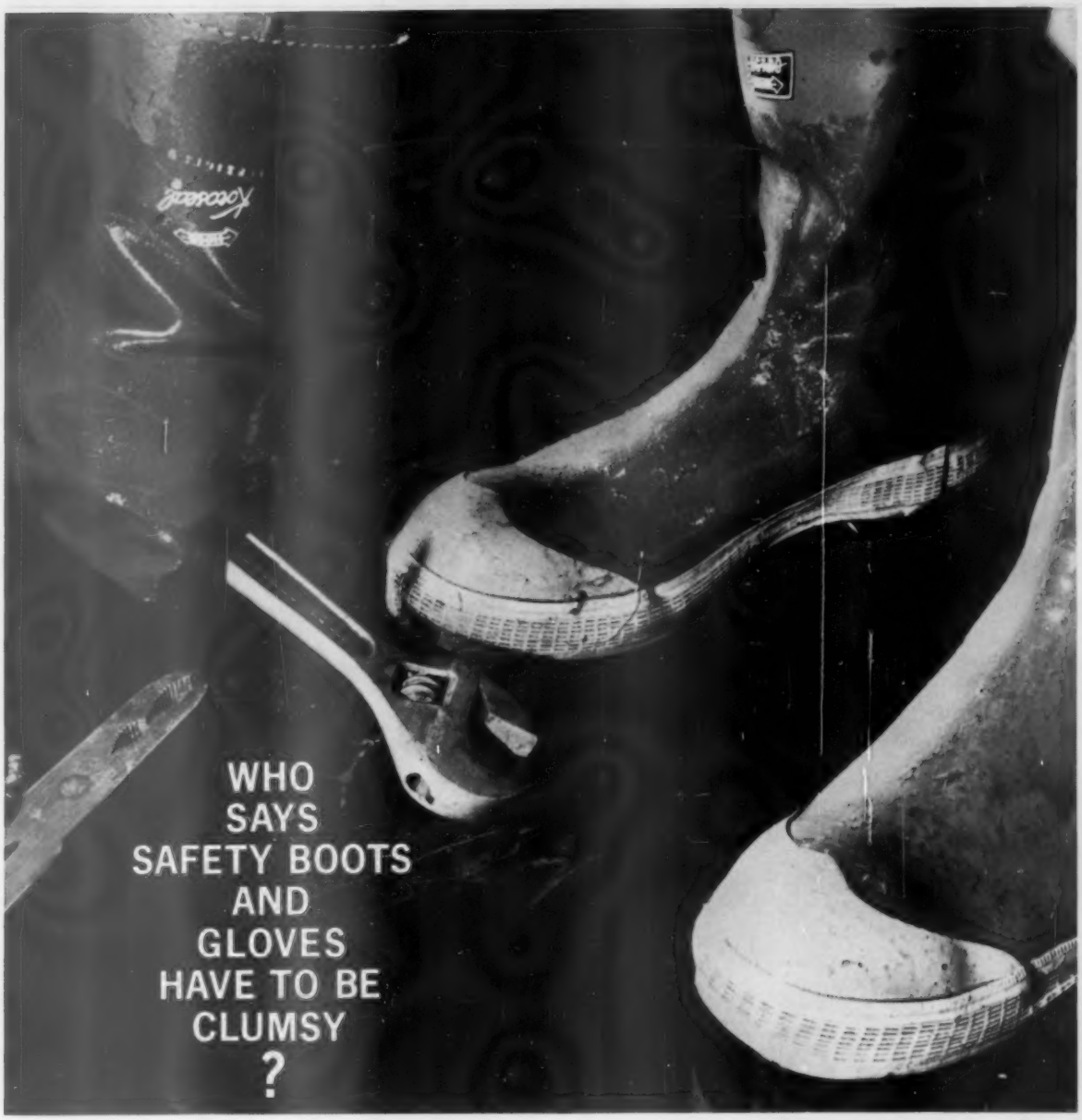
Between the two, I don't try to judge. I do pay Lee a good deal more money than I pay Bert—he has more experience, more education, and better prospects for getting a high-level job with some other organization. But I would miss Bert as much as I would miss Lee, I think, if I should lose him.

However, that isn't the issue. I do have both men, and I hope both of them will stay with me for a good long time. The question now is, "Who should the third assistant be?" It was on this point that I sought the advice of Bert and Lee.

Bert answered first. "Boss," he said, "I know you need a trained engineer as an assistant. There's plenty about this job a guy like me can't do for you. But we got Lee, and he's just what we need. Now look at it this way. You've both told me, time and again, that it's only once in a while you get to really make like professional engineers.

"Mostly Lee does just about what

— To page 94



Not Hood. That's for sure! Hood makes them easy to wear as well as protective.

Ordinary plastic gloves, for example, stiffen up in cold weather. But the special Koroseal compound used to coat Hood "Flexigluvs" stays soft and flexible at low temperatures—and provides far greater resistance to solvents, caustics, light oil, detergents. The Flexigluv has no obnoxious odor. And it wears longer, gives greater finger dexterity and comfort because its two-piece jersey shell has no seams in the wearing surfaces. Comes in knit wrist style, and 12″ and 14½″ gauntlet.

For foot comfort and protection, nothing equals Hood's Lectro Flexiboot. It has a sponge cushion insole that does a terrific job of cutting on-the-job fatigue. Non-skid molded soles prevent slippage. Lectro footwear is completely coated on the outside with a thick layer of neoprene. Ideal for wear in refineries and other places where high resistance to oil, grease, most acids, and fats is needed. Choose Hood Lectro neoprene footwear in regular and ankle-fit boots with plain or steel toes, industrial work shoes with steel safety toes, or the over-the-shoe style.

Hood offers a big selection of footwear and gloves—a type for every industrial need. Ask your local Hood distributor for catalogs, or write *Hood Industrial Footwear & Gloves, Dept. N, Watertown 72, Mass.*

INDUSTRIAL FOOTWEAR AND GLOVES BY HOOD

CIRCLE 11 ON READER CARD

ACCORDING TO Z16...

Back Injuries During Regular Work

By H. GENE MILLER

Manager, NSC Research and Statistics Dept., and member, Z16 Committee on Interpretations

THE PREVIOUS two articles on back injuries included the present wording of the Standard, and an interpretation of this wording which is included in the appendix of copies of the Standard printed since 1959. The articles also stated in general terms those activities and circumstances which the Committee on Interpretations has ruled make a back injury reportable, and those which do not.

From the reports on back injuries being submitted to the Committee on Interpretations, it appears that the statement in the Standard which is the most difficult to interpret is the one referring to the employee's normal, regular duties. This is the last paragraph of Section 5.2:

"A back condition which is revealed while an employee is performing his normal, regular duties, but which neither results from nor is caused by an accident or incident, shall not be considered a work injury."

This statement was included in the Standard to help separate back ailments which merely showed up during work from back ailments which arose out of work. The philosophy of this statement is sound and is in keeping with the basic philosophy of the Standard that a disability is considered a work injury only if it arises out of and in the course of employment (Section 1.1).

The statement has been generally misunderstood and misinterpreted, however, to mean that every back injury which occurs during the employee's normal, regular duties is not a work injury. *This is not the correct interpretation.* A back condition would not be reportable only if it did not result from nor was caused by an accident or incident.

If a back condition does result from, or is caused by an accident or incident, it is considered a work injury and must be so reported, even though it occurred during the employee's normal, or regular duties.

Specifically, the interpretation of 5.2 which is now included in the appendix of the Standard states in part:

"It is not the intent of 5.2 to exclude from the record any back injury that did in fact arise out of employment, merely because it became symptomatic or apparent in the performance of normal, regular duties. Reportable back injuries can and do occur in the performance of normal, regular duties. Specifically, the possibility of overexertion is not ruled out merely because the particular activity involved at the time of the onset of symptoms is one that the employee has repeatedly performed without injury."

Case Histories

Three cases are cited here in which injuries occurred during normal, regular duties. Two of these were ruled reportable; one was not.

Case 727. Two employees were on opposite sides of a table as they removed a machine guard about three feet long, weighing 60 lbs. The employee on one side of the table threw his end of the guard sidewise across the table so that the other employee, by holding on to his end of the guard, could pivot it in a 90 degree arc and get it on his side of the table. As the first employee threw his end of the 60 lb. guard, he felt a catch in his back and was unable to work for several weeks. This was his normal, regular work which he had been performing three or four times per shift for several years. The doctor diagnosed his trouble as strained back muscle.

Decision: The Committee concluded that the injury should be considered work connected and included in the company's work injury rates. The act of throwing the 60 lb. guard across the table was considered an incident in accordance with part

— *To page 48*

This series of articles is presented to provide a better understanding of the standard injury reporting procedure, to accomplish more uniformity in the classification of injuries, and to permit the safety man to rule on more of his own cases. The wording and intent of the Standard will be cited, illustrated by rulings of the Committee on Interpretations.

Perfect Circle cuts costs of safety

It's not what you pay *out,* but what goes *into* a safety program, that determines cost. That's why Safety Director R. A. Kramer (below), of the Sleeve Castings Plant, Perfect Circle Corporation, buys Willson Contour-Specs® and respirators. He knows that *true* cost has to include cost of storing, handling, and fitting safety equipment. Read (next page) how he reduced eye accidents by using *universal-fit* safety glasses, at the same time eliminated *unnecessary* cost.

WILLSON®

Universal-fit Willson glasses and respirators combine safety and economy

One of your best opportunities to economize these days, as proved in this example at the Sleeve Castings Plant of Perfect Circle Corporation, is in the way you *use*, not in the way you buy, safety equipment. Cost of machine downtime and non-productive man-hours resulting from breakage, adjustment, or individual fittings of safety equipment easily can amount to several times its original cost. So, whenever you can combine proper protection with *automatic* fit, it's going to reduce operating costs.

Safety Director R. A. Kramer provides eye protection for 350 workers at Perfect Circle, using industry's most widely accepted universal-fit safety glasses—Willson Contour-Specs®. Besides reducing inventories and eliminating individual fittings, hinged-bridge Contour-Specs provide cup goggle-type protection necessary against hazards such as molten iron splashes in spin casting.

Plastic sideshields on extended nose pads assure full protective closure around the eye. In the words of Mr. Kramer, "Contour-Specs cost about the same as standard glasses, *but they average twice the life*. Broad plastic nose pads, integral with Contour-Spec frames, eliminate problems of rocker pad breakage." Contour-Specs, because of their exclusive hinged bridge, snug up the sideshields around any face—replace up to *ten sizes* of conventional safety glasses.

Willson MonoMask® for dust hazards

Other savings result from the flexible, crushproof construction of Willson MonoMask respirators, used to filter dust which envelops sleeve-cutting and cupola-cleaning operations. This soft neoprene mask has molded pleats for a self-adjusting fit across the nose. Only seven basic unbreakable parts simplify cleaning and reduce parts inventory.

Filter is easily and quickly replaced. Neoprene does not irritate skin or break down from face oils.

Willson Safety Clinic graduate Jack W. McKenna of The E. A. Kinsey Co. provides Perfect Circle personalized safety counseling.

Ask your Willson distributor to show you important economies with dependable eye, lung, head, and hearing protection by Willson.

Exclusive Contour-Specs are available with green- or flesh-colored frames and sideshields, popular P3 or F7 lens shapes.

Universal-fit Willson protectors are worn with comfort for complete eye and lung safety. Hinged-bridge Contour-Specs offer flexibility of cup-type goggles, lightweight protection of safety glasses. Willson MonoMask automatically shapes to any face for positive lung protection.

safety is worth working for **WILLSON**®

Willson Products Division
Ray-O-Vac Company
Reading, Pennsylvania
In Canada: Safety Supply Company

CONSULTATION CORNER

By L. C. SMITH, Industrial Department, NSC

Questions on accident prevention, fire protection and occupational hygiene are answered by mail. A few are selected for publication

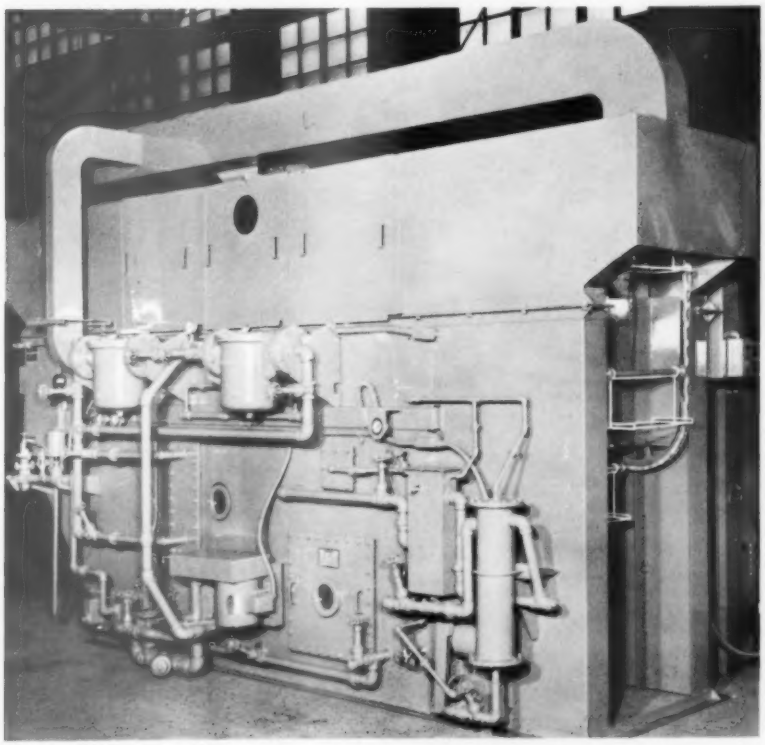
Hazards of Ultrasonic Vapor Degreasers

Question: What hazards are involved in use of ultrasonic vapor degreasers? While I haven't heard of any injuries from this source, I wondered if you had any information on the subject.

Answer: We haven't heard of any injuries due to the operation of ultrasonic vapor degreasers. However, there are hazards that could lead to injuries. These are a combination of the hazards of the ordinary degreaser and the hazards of radio frequency equipment which includes high voltages.

If anyone should get his hands into the liquid solvent in the sonics chamber of the degreaser, he would be burned severely by the solvent. In some ultrasonic degreasers the solvent is trichlorethylene, which is maintained at a temperature not exceeding 170 F. Even at this temperature it will inflict severe burns, because of the combined effects of the temperature and the radical degreasing tendency of the solvent.

You may have an inhalation problem due to vapors, if the equipment is not properly operated and maintained. As to the shock hazard, modern practice is to use sealed units for the ultrasonic transducers. These are carefully grounded. In other words, there is no shock hazard in a properly maintained modern unit.



Ultrasonic degreasers are efficient cleaners. (Photo, Detrex Chemical Industries, Inc.)

Hydrofluosilicic Acid Hazards

Question: We are in need of facts on hydrofluosilicic acid and hazards involving its use. Our company has plans for using this acid in a soaking process.

Answer: Hydrofluosilicic acid is also known as fluosilicic acid or silico-fluoric acid.

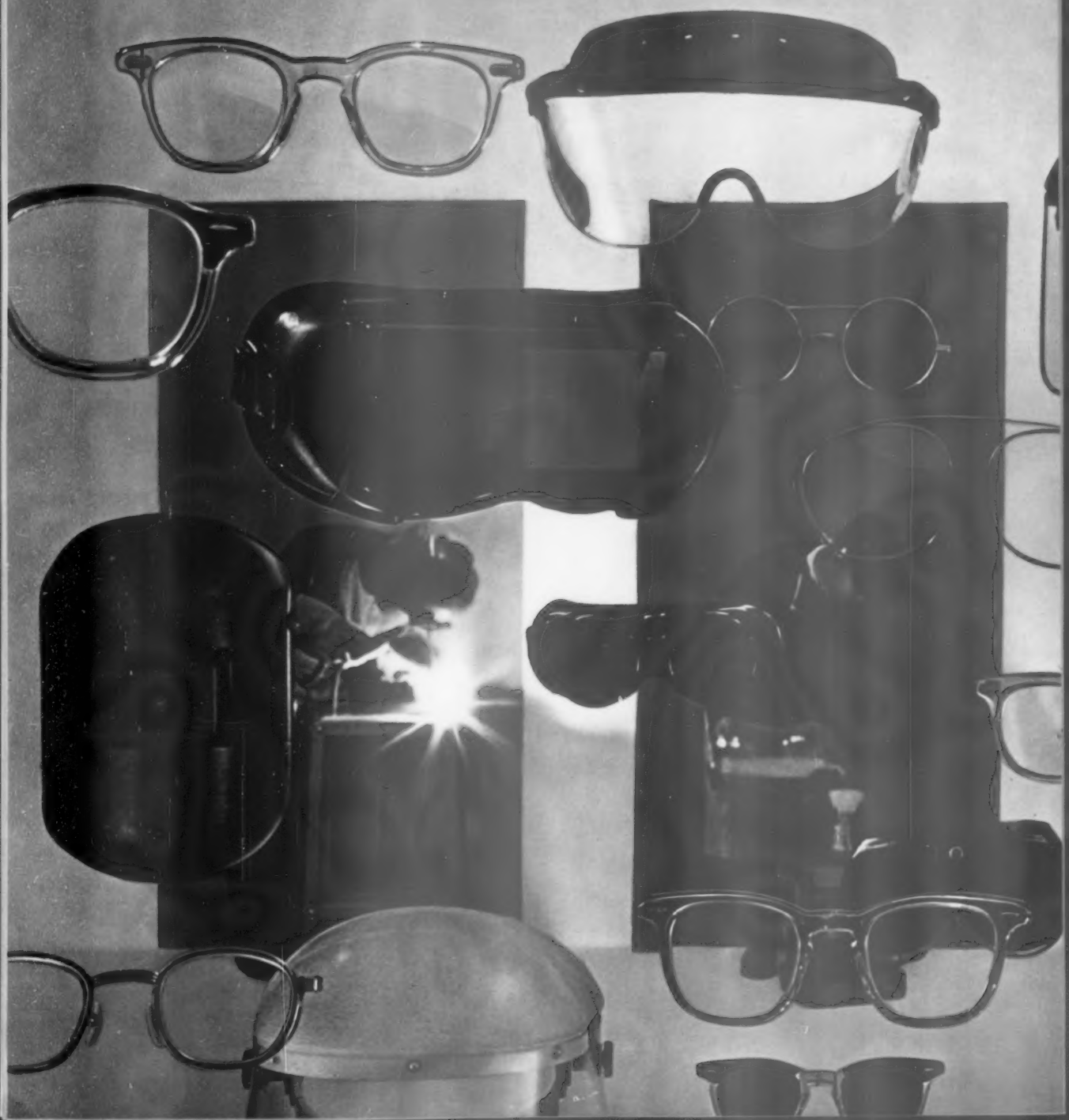
This material is a transparent, colorless, fuming liquid which is highly corrosive. It also has a high toxic rating.

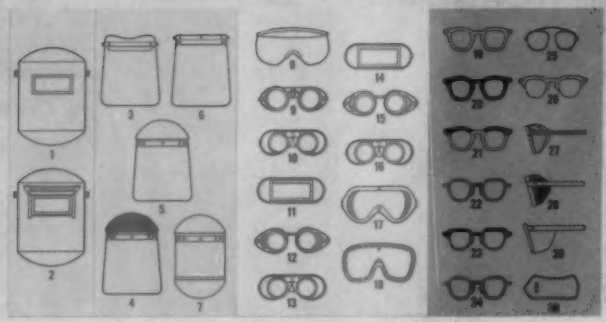
This material is dangerous. When heated to decomposition, it emits highly toxic and corrosive fumes of fluorides and will react with water or steam to produce toxic and corrosive fumes. It is classified by the Interstate Commerce Commission as a corrosive liquid requiring a white label for shipment.

When in contact with the skin, the acid and its salts cause redness and a burning sensation, sometimes followed by the formation of ulcers. A pustular rash has been observed among men working with the sodium salt. This particular salt is highly toxic when ingested, numerous deaths having been recorded.

THE LOGIC OF PLACING YOUR SAFETY EYEWEAR BUSINESS WITH THE MAN FROM MSA: enough styles, enough optional features to satisfy the whim of any wearer. ***We'd like to help you win your worker's full-time acceptance of eye and face protection. It shows through in the sheer weight of numbers we offer the wearer to choose from. You see it again in the smart, trim lines of the styling. It's visible too in our ability to match the right equipment to the right job. Add to this big picture approach a complete vision program, including Rx service. And there you have it. A truly complete package. That's why it's so logical to place your safety eyewear business with the Man from MSA.***

MINE SAFETY APPLIANCES COMPANY, Pittsburgh 8, Pennsylvania MSA





M-S-A Welding Helmets

1. Full Curve Fixed Front
2. Full Curve Lift Front

M-S-A Faceshields

3. Minigard
4. Super-Gard
5. Facegard with Sparkgard
6. Facegard without Sparkgard
7. Nitrometer Mask

M-S-A Goggles

8. Jones Visor Goggles
9. Metal Frame Flash Goggles
10. Comfo Chippers' Goggles
11. Clearvue Chippers' Goggles
12. Chippers' Cup Goggles
13. Chippers' Cover Goggles
14. Clearvue Welders' Goggles
15. Welders' Cup Goggles
16. Welders' Cover Goggles
17. Rubber Frame Goggles
18. Soft Sides Goggles

M-S-A Sightgard Spectacles

19. Flash Acetate
20. Ebony Acetate
21. Ebony-On-Crystal Acetate
22. Metal
23. Acetate-On-Metal
24. Smoke with Aluminum Temples
25. Metal "Clip-Ons"
26. Visitors' Spectacles

With Side Shields

27. Perforated Acetate Side Shield
28. Wire Mesh With Acetate Edge Side Shield
29. Solid Acetate Temple-Mounted Half Shield

M-S-A Open End Case With Pocket Clip

30. (Wide range of MSA cases available)

THE SAFETY LIBRARY

Reviews of books, pamphlets and periodical articles of interest to safety men

By **LOIS ZEARING**, Librarian, NSC

Occupational Diseases, Industrial Medicine

Occupational Diseases and Industrial Medicine. By Rutherford T. Johnstone, M.D., and Seward E. Miller, M.D. 1960. 482 pp. W.B. Saunders Co., Philadelphia, Pa. $12.

ALTHOUGH PRIMARILY intended as a reference source for physicians practicing industrial medicine and as a text for students and teachers of occupational medicine, this book will be of interest to anyone concerned with occupational health.

The senior author, Dr. Rutherford T. Johnstone, has had considerable clinical and toxicological experience in occupational diseases and has written earlier books on this subject. He is now a consultant in industrial medicine, clinical professor of preventive medicine and public health, and clinical professor of medicine at the University of California in Los Angeles.

The junior author, Dr. Seward E. Miller, has had clinical teaching and pathological experience and is presently director of the Institute of Industrial Health, professor of medicine of the Medical School, and professor of industrial health in the School of Public Health at the University of Michigan, Ann Arbor.

This publication is divided into two parts – the practice of industrial medicine, and the occupational diseases.

Part I describes characteristics of the practice of industrial medicine; duties of the industrial physician; the role of the physician, nurse, industrial hygienist, industrial toxicologist, industrial dentist, and other allied personnel comprising occupational health teams; various insurance programs; man's adaptation to industrial life with a discussion of immaturity, psychosomatic illnesses, and alcoholism; rehabilitation and job placement of the handicapped; diagnoses of occupational diseases; and use of the clinical and toxicological laboratory.

Part II deals with the clinical approach to occupational diseases. Many case histories here illustrate excessive occupational exposures to toxic materials. Industrial hygiene principles are used in discussion of controls of exposures. Safe handling practices, the prevention of chemical trauma, and use of personal protective equipment are discussed in this section.

In addition to the discussion of occupational diseases caused by gases, vapors and dusts, there is comment on occupational infectious diseases caused by such physical agents as vibration, noise, extremes of temperature and pressure, photoactinic agents and ionizing radiation.

Individual chapters mention synthetic resins and plastics; propellants, fuels and oxidizers; and pesticides. Modern technological changes on these subjects are inevitable, but these chapters provide a current progress report on the subjects.

In the introductory chapter in the section on occupational diseases is a statement that may indicate the potential of possible exposures to new chemicals which may cause new occupational diseases, often overlooked and not diagnosed:

"Every 20 minutes, 24 hours a day, 365 days a year, a new chemical is born – actually about 25,000 new chemicals a year–many finding their way into industry. Every year about 200 of these new chemicals (and old ones finding new uses in industry) have sufficient adverse health effects to cause disease."

J. T. SIEDLECKI

"I'm going to catch up on some reading I've been neglecting lately."

BOOKS AND PAMPHLETS

Atomic power

Annual Report to Congress of the Atomic Energy Commission, 1960. 1961. 544pp. U.S. Atomic Energy Commission, Washington 25, D.C.

Chemicals

Ethyl Ether. Rev. 1961. 11 pp. Association of Casualty and Surety Companies, 60 St. John St., New York 38. (Chemical Hazards Information Series – No. C-36 Materials).

Plastic Foams – Storage, Handling and Fabrication. 1960. Manufacturing Chemists' Association, 1825 Connecticut Ave., N.W., Washington 9, D.C. (Safety Guide SG-5). Price 20¢.

Construction

Uniform Building Code. 1961. Vol. 1., 1961. 447pp. International Conference of Building Officials, 610 S. Broadway, Los Angeles 14, Calif. Price $7.50.

Consultation

The Consultative Approach to Safety. 1960. 9pp. Office of Technical Service, Division of Safety, Bureau of Labor Standards, Superintendent of Documents, Washington 25, D.C. (Safety in Industry Series. Bulletin 223). Price 15¢.

Elevators

American Standard Safety Code for Elevators, Dumbwaiters and Escalators. 1960. 300pp. The American Society of Mechanical Engineers, 29 West 39th St., New York 18. (A17.1-1960). Price $3.75.

Fire prevention

1960 Property Insurance Fact Book. 36pp. Insurance Information

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WIRE FROM WASHINGTON

By HARRY N. ROSENFIELD
Washington Counsel,
National Safety Council

Manufacturing Injuries Down

SAFETY PROGRAMS and proposals have played a prominent part in the early days of the new administration's term of office.

Industrial Safety. Manufacturing injury rates declined in the fourth quarter of 1960, according to the U.S. Department of Labor. Following the usual seasonal pattern, the all-manufacturing injury frequency rate declined 13 per cent below the third quarter average, to a 10.4 rate.

This rate was 6 per cent below that for the corresponding period of 1959 and equalled the previous all time quarterly low established in the fourth quarter of 1957. The average rate for 1960 will be an indicated 5 to 6 per cent below 1959, according to official estimates.

The U.S. Bureau of Mines reported the over-all injury experience in the nation's coal mines was slightly less favorable in 1960 than in 1959. Fatalities increased 11 per cent, and their rate of occurrence increased 21 per cent. Nonfatal injuries decreased, but their frequency rose slightly.

According to the Bureau, bituminous and lignite coal mines show an 18 per cent increase in fatalities in 1960 and a 28 per cent increase in frequency of occurrence over 1951. Anthracite mines reported deaths were down 26 per cent, with a 14 per cent lower frequency.

In bituminous mines, the number one killer was roof falls, which caused 59 per cent of all fatalities in underground employment of such mines in 1960. The Bureau issued in final form its amended regulations on test requirements for dust collectors used with rock drilling in coal mines.

A federal court of appeals ruled the Federal Boiler Inspection Act imposed liability on a railroad for injuries suffered by a brakeman who slipped on sand and oil located on the engine's platform, even though the dangerous condition did not result from mechanical or structural defects or from violation of any Interstate Commerce Commission rule. The court said: "The requirement of safe equipment is set by the statute."

As usual, predominant federal interest in the industrial safety field revolved about atomic energy. In its periodic statutory report to the Joint Committee on Atomic Energy, the Atomic Energy Commission called attention to the problems it has had in the past year with "location of reactors and other factors associated with potential hazards of nuclear systems."

The Commission told the Congress it "believes that the health and safety of the public must take precedence over the desire to push ahead with a vigorous reactor development program if the two objectives should be in conflict."

As a result, preferred reactor sites were "found to be unsatisfactory from the standpoint of public hazards," reported the AEC.

The AEC took the first step toward separating its safety and promotional duties, by enabling the head of the regulatory staff (in charge of safety) to report directly to the Commission instead of to the AEC's general manager.

In connection with the AEC's organization, a staff report of the Congressional Joint Committee on

— To page 141

THIS MONTH IN WASHINGTON

Congressional Joint Committee on Atomic Energy proposes creation of Atomic Safety and Licensing Board within AEC. Members would be presidential appointees, two of whom would be scientists or safety engineers.

AEC issues approved criteria under which states may assume regulatory control of certain radioactive materials, such as radioisotopes, source materials, and special nuclear material of less than critical mass.

AFL-CIO holds first national institute in safety training. Four week-long institutes are planned yearly to train union leaders. Courses include beginning safety instruction, chemical and environmental training.

CAB indicates plans for task-force technique of accident investigation, in which all its investigators are assigned to single accident to get quick results.

President designates week of July 2 as National Safe Boating Week, and the week of July 23 as National Farm Safety Week.

This report is an information service. Publication does not imply National Safety Council approval of or opposition to any legislation mentioned.

By JAMES W. LAKE
Manager, Industrial Hygiene Dept.,
Michigan Mutual Liability Co.,
Detroit, Michigan

Where you have dust, fume, vapor, or mist problems in your plant, local control ventilation is the best buffer against these hazards

How to Capture, Control Contaminants

LOCAL control ventilation is probably one of the best methods of control for dusts, fumes, vapors, or mists in use today. By local control ventilation, I mean capture or removal of the contaminant at the source, such as dust from a grinding wheel or fumes from a plating tank.

Efficient removal of the offending substance at the source depends on the volume and velocity of air moving into the hood, on the shape of the hood, on the distance between the hood and source, and in the case of a dust particle, the direction in which it is moving.

With the right shaped hood and the correct distance of the source from the hood, you can minimize the velocity needed and decrease over-all control costs. For example, look at an inside diameter grinding operation.

In Figure 1, the local ventilation consists of a hood 3 in. by 8 in. located as close to the grinding operation as feasible. Flanges or baffles were placed on three sides of the hood opening, the table acting as the fourth.

The flanging increases the volume of air moved across the dust source. It may also reduce the bad effect of air crosscurrents caused by man-cooling fans, etc. Flanging will usually reduce air requirements by 25 per cent.

Distance is important. Control air velocity decreases drastically as the source is moved away from the hood. Figure 2 illustrates this decrease.

When the distance of the source from the hood is one hood diameter away, the air velocity is approximately 10 per cent of the velocity at the hood face. For instance, if the velocity at the face of a 6 in. hood is 2000 fpm, the velocity 6 in. away from the hood is only 200 fpm.

The drawing on the right side of this illustration shows the advantage of flanging. If the volume and velocity is not adequate or the hood is not shaped right, the control system will not be efficient and too much undesirable material will be released into the plant.

These factors were all considered in the design of the hood for the inside diameter grinding operation,

Fig. 1. Here, local ventilation consists of a hood 3 by 8 in. located as close to the grinding operation as has been considered feasible.

Fig. 2. Control air velocity decreases drastically as the source is moved away from the hood. These charts illustrate the decrease.

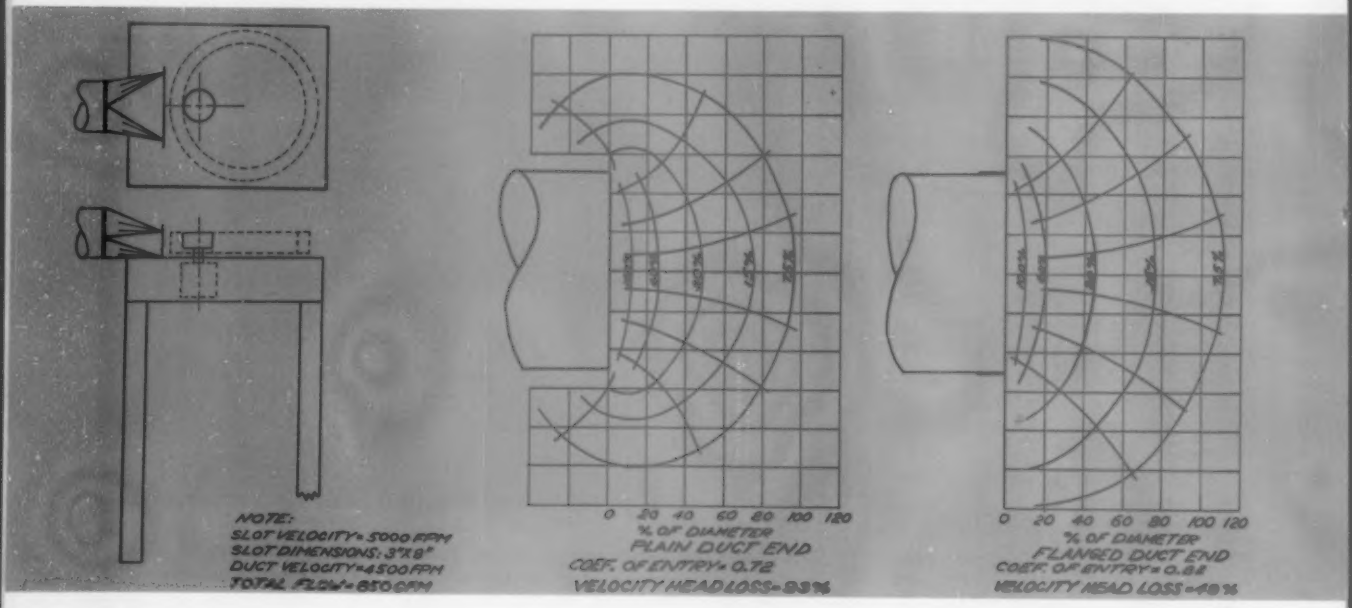


Figure 1. The effectiveness of the design is shown by the dust counts made before and after the control system was installed. The dust count before installation was 82.4 million particles per cubic foot. After installation, it was 7.5 million particles per cubic foot.

Local ventilation is necessary for machining or processing metals considered highly toxic. One of the more toxic metals is beryllium. The hygienic guide for this metal is 2.0 micrograms per cubic meter.

Consider a plant machining parts which for all practical purposes are 100 per cent beryllium. Initially they were doing this in two locations.

The analysis of air samples over a period in these locations gave high concentrations – one of the prime factors in the decision to build a new plant which would consolidate operations and allow better control of the beryllium in air concentrations.

The following series of pictures show some of the control system used.

Figure 3 shows a series of lathes each having the point of operation exhausted with an enclosing clear plastic hood. Note the tiled floor and the fluorescent lighting.

Ventilation of the drill press in Figure 4 is accomplished by placing the part on a small hood containing more than 150 exhaust orifices for the capture and removal of the metal particles. Note the plastic enclosure of the drill press to minimize machine contamination.

The table of this surface grinder and the grinder in Figure 5 are completely enclosed with a ventilation take-off at the wheel.

Figure 6 shows a series of inspec-

Fig. 3. This series of lathes shows each with point of operation exhausted with an enclosing clear plastic hood. Note tiled floor and fluorescent lighting.

Fig. 4. To ventilate this drill press, the part is placed on a small hood containing more than 150 exhaust orifices for capture and removal of metal particles. Note plastic enclosure of the drill press to minimize machine contamination.

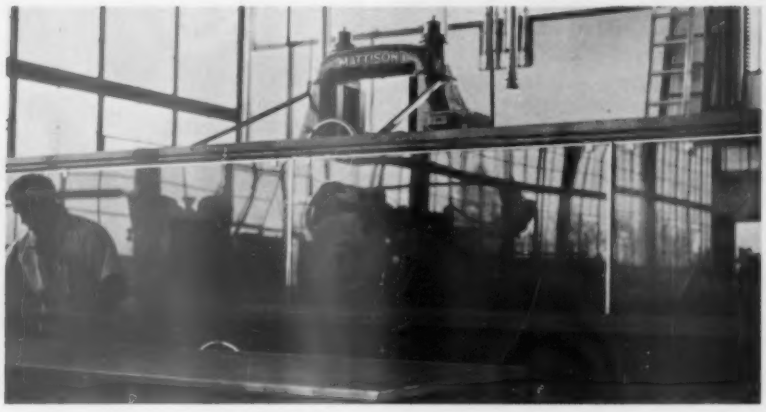


Fig. 5. The table of this surface grinder and the grinder are completely enclosed with a ventilation take-off at the wheel.

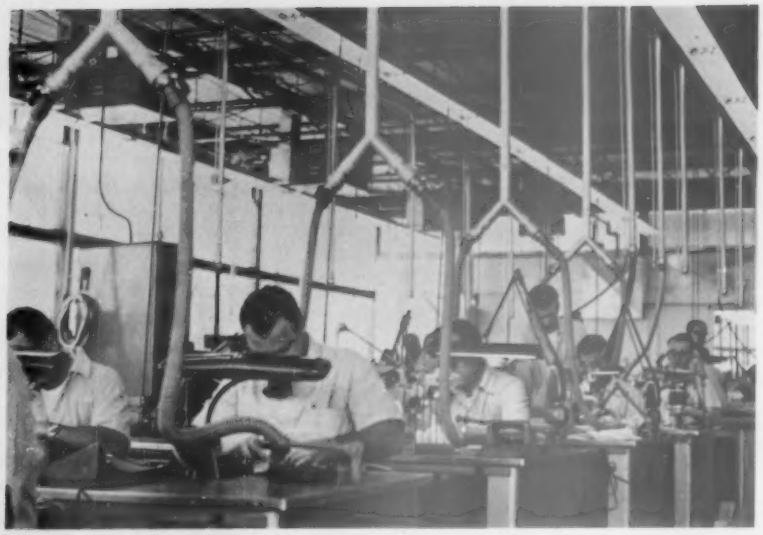
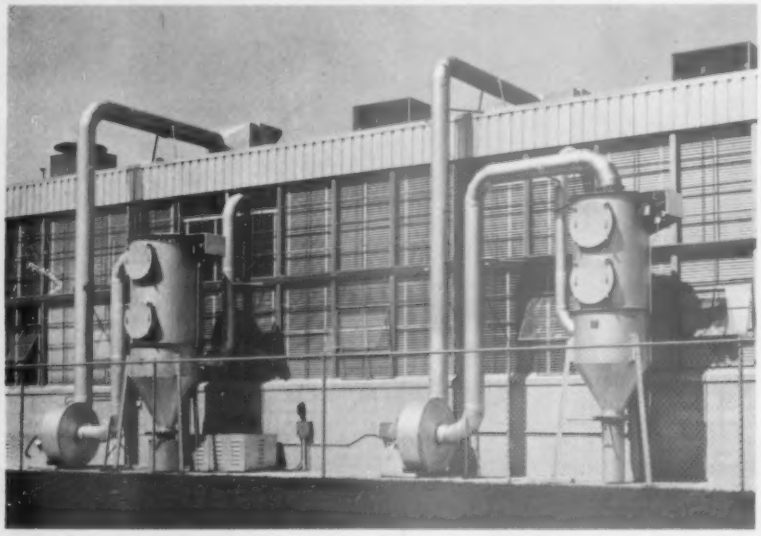


Fig. 6. This is a series of inspection desks where parts are checked with microscopes. Some deburring is also performed. There are two movable local exhaust hoods per desk.

Fig. 7. Pictured here are two of the four 40-hp units used to maintain a pressure of at least 4 in. of mercury in the branch ducts of this particular plant's ventilation system.



tion desks where parts are checked with microscopes. Some deburring also is performed. There are two movable local exhaust hoods for each desk.

Figure 7 pictures two of four 40-hp units used to maintain a pressure of 4 in. of mercury in the branch ducts.

Analysis of air samples taken in the breathing zones of the operators of the machines in the new plant gave concentrations lower than the established threshold limit of 2.0 micrograms per cubic meter.

To facilitate housekeeping, the floor and walls are sealed with a surface sealant. As a personal protective measure, workers change their shop clothing frequently. The clothing is laundered in the plant.

All beryllium parts are washed in sonic washers to remove residual dust before shipment to the customer.

The collector system was adequate, since samples taken at varying distances from the stacks were analyzed and found to be less than standards set for nonworking environments.

In meeting standards and insuring that only microscopic amounts of dust reach the neighborhood atmosphere, the care taken by this plant points up dramatically the increasing attention given to air pollution from manufacturing and commercial operations.

Reduction of air pollution is indirectly one of industries' largest off-the-job safety programs.

Figure 8 shows an operation where a new paint thinner was introduced in paint coating operation. Analysis of air samples taken in the immediate vicinity of the hood gave concentrations well within safe limits. This data, however, did not convince the employees that the new odor which came with the new thinner was not harmful.

Two changes were recommended to reduce employees' fears. Figure 9 shows changes made. Note the hood, flanging, and ventilation take-offs. The process shown in Figure 8 is having similar changes made.

Paint booths are nothing more than large local exhaust hoods. Flammable paint thinners become serious fire and health potentials if the fan in the ventilation system is not turned on.

To make sure the fan in the system is operating, a switch which will actuate the fan can be installed in the paint spray or conveyor circuits or both.

Dermatitis from screw machining or other machining operations using cooling or lubricating fluids is not uncommon. Housekeeping may also

Fig. 8. Here, a new paint thinner was introduced in the paint coating operation. Although analyzed as safe, workers objected to odors. Changes similar to equipment in Fig. 9 have been made.

be affected where manual handling of chips or turnings is involved.

Dermatitis incidence was greatly reduced in one plant through installation of a unit consisting of a receiving tank in which the chips and coolant are separated.

The chips or turnings are then removed by the sealed sectioned conveyor. Housekeeping and materials handling benefits also resulted from this installation.

During the past few years, new plastics have been developed such as polyvinyl chloride and modifications in the manufacture of known plastics such as the phenolics. These have produced additional applications as hood and duct material where corrosive acids, fumes or mists are being exhausted.

We have seen plastic ducts in use in one plant for approximately four years and have not observed any evidence of corrosion or duct failure.

Metal downdraft hoods in a plating line in another plant had corroded to the point of no return. These hoods were replaced with hoods made from masonite board which had been coated with epoxy resin. After one year's service they retain their new appearance.

Buffing and polishing ventilation ducts, due to the compounds used

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Tip-Offs on Health Hazards

How can you tell when action needs to be taken on a health hazard? What tips you off? This table gives examples and what to look for.

These are only a few tip-offs the safety engineer can use to keep his plant operating smoothly.

Actions taken may be a call to the maintenance department or may take the form of a request to your company hygiene department, your insurance company's hygiene department, a consulting industrial hygiene concern or a governmental hygiene unit to come in and evaluate the operation.

And safety and medical records are also important as tip-offs.

EXAMPLE	TIP-OFFS REQUIRING ACTION
1. Grinding wheels	a. The flow of dust into the hood. Is the dust going into the hood? b. The accumulation of dust on the operator's face.
2. Beryllium or highly toxic dusts	a. Small accumulation of dust on machines.
3. Paint and new thinners	a. Paint deposits on equipment outside of the hood or on booth walls behind the operator. b. Employee complaints about new odors.
4. Metal coolants	a. Observation of the coolant material on the floor or on employee's clothing. b. Dermatitis.
5. Plating	a. Build-up of salts in the hood. b. Irritating odors. c. Duct and hood corrosion.
6. Buffing and polishing	a. Observation of dust flow into the hood. Is the dust going into the hood? b. Accumulation of dust in buffing and polishing areas.
7. Additional ventilation installed	a. Other control systems not as effective as before. b. Hard to open doors. c. Combustion odors in cold weather.
8. Welding or soldering	a. Use of hood. b. Fume flow into hood. c. Location of hood.

Fig. 9. Hood, flanging, and ventilation take-offs were installed around this paint booth when employees complained the odors were interfering with their work. Equipment is much like that in Fig. 8.

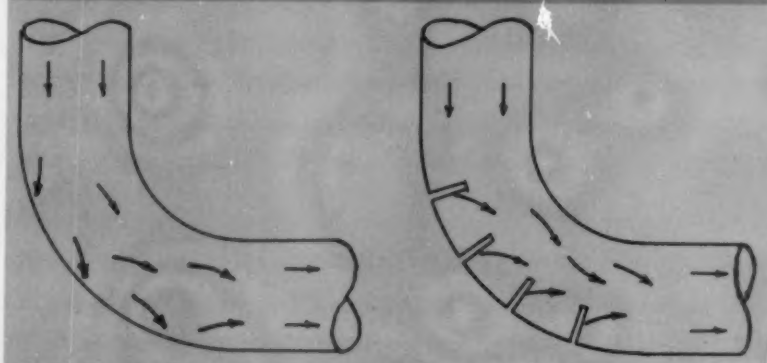


Fig. 10. To counteract build-up of materials at duct elbows, one engineer cut slots in elbow to provide cushioning air stream that directed particles away from elbow wall and into main air stream.

will AUTOMATION replace the SAFETY MAN?

"Hazardless" operations have arrived, but engineering, education and enforcement still guide the safety manager

By GLENN F. GRIFFIN
Safety and Training Consultant

Men who work alone — like this petroleum company employee who tends instruments that control the distant pumping station below — are subject to new strains and dangers. Better training and supervision, the author says, are needed to counteract the hazards introduced to such jobs by automation.

AUTOMATION has to do with machinery in motion performing work without the immediate control of any person, whether its operation results from the action of cams or eccentrics or air pressures or thermal expansion or sound waves or a beam of light or electronic devices. The practical result is the same. A mechanism takes over an operation which has previously been done by a person. Remote control, in which one person from a central location directs mechanisms which do work at remote points formerly done by men on the spot, is also included.

Various reasons are given for automation

1. It reduces labor cost.
2. It gives better quality control.
3. It results in faster operations.
4. It increases safety.

I think it goes without saying that No. 1 is considered the most important reason.

Improved quality has been a major factor in some industries. Faster production has been a major factor.

Many companies have given safety as one reason for automating, but usually not as the main reason.

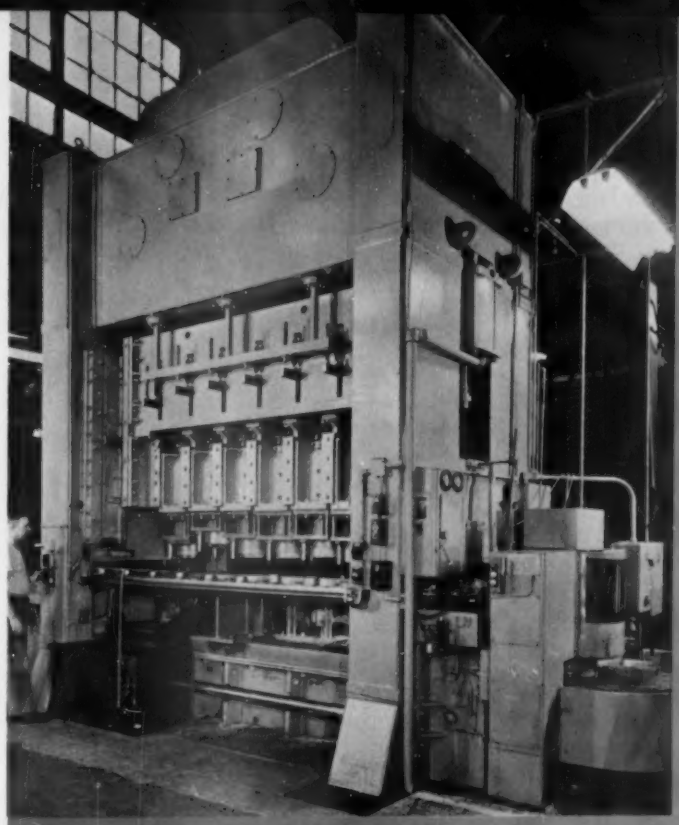
However, during the past many years, mechanization of various sorts has been employed mainly to prevent accidents.

In two areas, we could have predicted that mechanization would reduce accidents. The first and possibly the most important of these is in the field of material handling. The handling of material is a source of about one-fourth of all industrial injuries. This includes not only the kind of material handling that is done by laborers and other professional material handlers, but also the kind that every industrial worker generally does in connection with his job, such as loading parts from a truck to his machine, or from his machine to a truck.

Conveyors, cranes, hoists, and even power trucks, which brought in a bunch of safety problems of their own, all helped to reduce the material handling accidents.

In the accelerated mechanization

Adapted from "Automation and Safety," an address authored by Mr. Griffin and published by the Bureau of Industrial Relations, The University of Michigan, Ann Arbor, Mich.



Automatic-feed operations like this six-station transfer press, provided with dual interlocking controls, greatly reduce danger to the operator. But such highly complex machines also offer unusual dangers to maintenance men.

Automated processes are a boon to safety in foundries. Dangers inherent in manual handling of hot mold are eliminated by machines like this cooling conveyor. Automated pouring stations also cut possibility of injury.

that is going on today, material handling is still one of the manual jobs most frequently eliminated.

The second area in which automation has brought about a tremendous improvement in safety is in the feeding of machines. Wherever people have to feed machines with their hands, there is danger. While machinery is not the source of the largest number of accidents, it is the source of by far the largest number of permanent partial disabilities – such things as lost hands and fingers which used to be so common in our industrial operations.

More permanent impairments are caused by improper operation (mainly poor guarding and poor maintenance) of power presses than by any other mechanical agency.

But when automatic feeds of various types have been installed and safety has been built into dies, and used in connection with guards, it becomes unnecessary and sometimes impossible for the operators to get their hands in the danger zone. Today in any good, progressive punch-press operation we see the most amazing devices for placing work in presses and taking it away. Many of these are in highly automated plants. Many are in plants where a number of machines are coupled so that the work passes from one station or one press to another without ever being touched by an operator.

One of the places where automation has made its biggest advances is in foundry operations. Several motor block lines have received more attention than almost any other automated operation. More than 30 years ago, progressive foundries were getting away from some of the manual operations that were the most hazardous. One of the first steps was the introduction of molding machines that did much of the manual work, increased the productivity of molders, and decreased the hazards.

Then conveyors were installed to carry the molds past a pouring station where the pouring could be done under carefully guarded conditions.

And so on through other foundry operations – shake-out, transporting from one operation to another, sprue cutting, grinding – all hazardous operations which in an automated plant are not hazardous at all because they are done by machines.

Sandblasting, with all its health hazards, is now done under conditions where nobody is exposed to the silica dust.

In the railroad business, the work of classifying cars and making up trains used to be laborious, expensive, slow, and dangerous.

In modern hump yards nobody rides the cars. Nobody stands at the switches. The switches are thrown by remote control and the cars are slowed by car retarders.

The jobs that were eliminated were dangerous jobs.

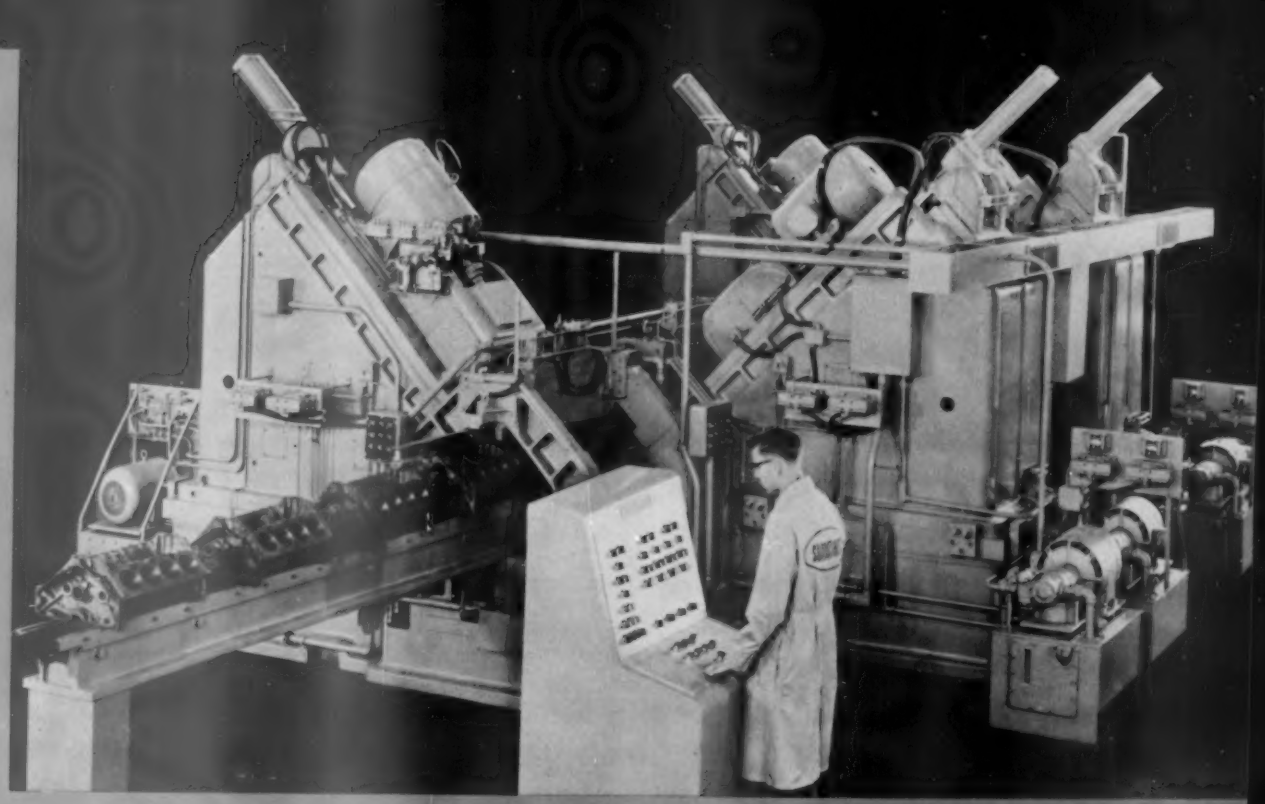
In dry chemical industries, such as the commercial fertilizer industry, for example, handling material is the principal job.

If you automate such a plant, the material is taken from cars to overhead bins by conveyor. It is dumped in measured amounts onto a conveyor that carries it to the mixer where it is mixed by a closed machine. The hazards that always go with material handling have been engineered out of the job, and the dirtiest, least-skilled, lowest-paid kind of job has been eliminated.

Many oil refineries have been quite thoroughly automated, and remote stations are now commonly used to control hazardous operations.

One more example of safety resulting from automation comes from a paper mill. On a paper machine, they have installed a radioactive isotope gauge to measure the thickness

Beta gage on a paper tape making machine controls thickness of glue coating applied. Similar gages are used on paper web mills to control density and thickness of the web. Such automatic controls reduce web breakage, and downtime, with its relatively hazardous maintenance chores, also is reduced.



Push button controls on this automatic motor block milling machine are operated at a remote console. The operator, removed from the actual machine, is safe from hazard.

and density of the paper. This gauge is at the winding end of the machine, automatically controlling the mix that is fed in at the wet end of the machine. They claim that this immediate and automatic control results in fewer breaks of the paper as it goes through the machine. As everybody knows, when breaks occur in a paper machine, the job of rethreading the machine is dangerous and has resulted in many accidents.

In the same industry, when a leak

— To page 127

Forty-foot lengths of gas-line pipe are automatically formed in three stages on these presses. Dual controls for each press are interlocked to keep both operators clear.

Judges watch a driver maneuver his fork lift truck through a mocked-up version of a crowded aisle. One-inch clearance tests operator's judgment.

Safety Gets a Lift

To get a license to drive their fork lift trucks in this plant, drivers must pass a day-long course

DRIVING a fork lift truck through narrow aisles, up and down ramps, and around tight corners – without hitting anything – requires more skill than maneuvering the family car through traffic-packed streets.

So drivers at Crouse-Hinds, Syracuse, N.Y., are put through a tough training program to sharpen their judgment and instill in them the courtesy, caution and common sense necessary to safe vehicle operation.

This driver safety program was set up by Joel Anderson, training supervisor, and John Haas, safety director, to give initial or brush-up training to the firm's 80 truck-lift operators.

The day-long program is divided into several stages: instruction on maintenance of trucks; lecture on safe operation; viewing of demonstration driving on the obstacle course; actual driving of the obstacle

Foremen who will act as field judges are briefed on what a driver is expected to know about the operation and maintenance of his fork lift truck.

course; and written and physical examinations.

At least half the time is spent in actual operation of vehicles in practice areas.

After drivers have been instructed by lecture, demonstration and visual aids, they go to the obstacle course set up outside a warehouse. The demonstration driver starts by showing how to accomplish the daily check of the machine: tires, lifts, oil, radiator, gas, engine, horn, and headlights.

Any defect, the drivers are told, is to be reported to the foreman.

After watching the expert put his truck through its paces, each of the other drivers attending the class makes his training run.

First trial is a figure-eight course in which the driver must maneuver the vehicle forward and backward around pallets arranged to simulate conditions encountered in everyday work. Clearance between pallets is one or two inches on each side of the machine.

A test of the driver's proficiency in picking up and transferring loaded pallets is made inside a nearby warehouse. There he must maneuver the truck in and out of a congested area simulated with pallets, driving the truck in forward and reverse directions.

To train the driver to keep the forks in the proper position when using ramps, an inclined plane has been constructed as part of the outdoor course.

As a final sharpener of the operator's judgment, he drives in forward and reverse through a long aisle formed of pallets on edge. Clearances here are only an inch on each side.

Following these practical application tests, drivers take a written examination.

A physical fitness examination by the company doctor completes the day.

Drivers who qualify, according to the instructors and a committee of foremen, receive certificates of completion. Drivers who knocked over pallets, showed poor judgment, or otherwise failed to qualify, are given a second time through the course.

Only drivers holding the certificate of completion are "licensed" to drive the company's internal transportation equipment.

A driver shows the proper way to approach a pallet to be lifted from a bin and transferred to another part of the warehouse. Safe techniques as well as skill in handling the truck are criteria used by judges. Drivers who flunk must retake course—and pass it—before earning their license.

A portable megaphone is used by the instructor to explain the proper and safe way to back out of the bin with the pallet. Drivers waiting their turn learn from the instructions given — and the mistakes made by — the driver under examination. About 80 men have taken the course.

IDEAS THAT WORKED

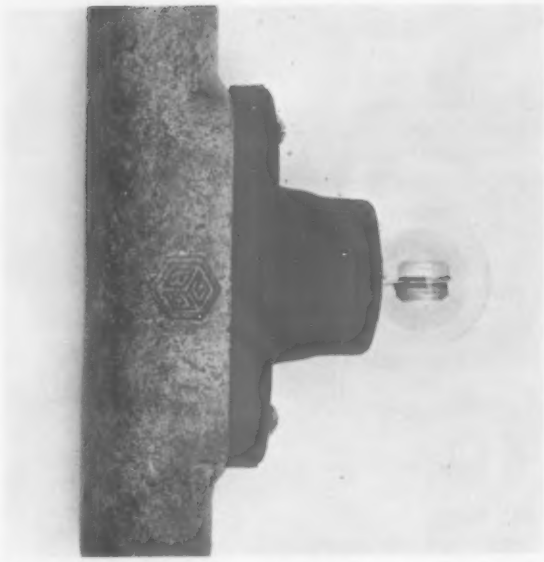
Devices and Ideas to Help Your Safety Program

By **ARTHUR S. KELLY,** Industrial Department, NSC

Guard Stops Cuts, Shocks

PILOT LIGHTS, designed as safety features to indicate when machine power is on, can themselves be a hazard. The exposed bulbs, if accidentally broken, present both cutting and electrical dangers. One ingenious machinist designed the cover shown. Fabricated of sheet metal with rod stock welded to form the open grill, the guard is simply slid under the screws which hold the lamp socket to the vertical conduit.

This idea that is working at the Marathon Corp., a division of American Can Co., was submitted by George H. Zick of the Maintenance Department.



To prevent pilot lights like this one from being accidently broken . . .

. . . like this one, which presents a cutting and shock hazard . . .

. . . install a shop-made guard like this one to protect the bulb.

No Hit-or-Miss Now!

TO KEEP CIGARETTE butts from littering the entrance to a no-smoking area, David Crowe, a shop worker at the Albertsville Textile Div. of the Kendall Co., Albertsville, Ala., designed the disposal can shown. Butts must be dropped into the small open end of a pipe, a system that has eliminated hit-or-miss flicking common when open cans are provided.

The can is essentially a 5-gal. paint, grease, or other type of pail. The clamp-type lid is removed, and a 1½-in.-diameter hole bored in the center. A pipe flange is bolted over the hole, and a 3-ft. section of 1½-in. pipe is screwed into the flange. All but three of the clamps on the lid are removed to allow it to be taken off easily for emptying.

The idea, which worked so well it is now used at several plant locations, was submitted by H. M. Oakley, safety chairman.

APRIL WINNER

Winner of the Ideas published in the April NSNews was submitted by Harry A. Harris, safety inspector at International Harvester Company's Farm Equipment Research and Engineering Center, Hinsdale, Ill. Last fall Harris had sand packaged in plastic bags printed with a safety message, and gave a bag to each employee as protection for his car against bogging down in winter ice and snow.

How We Pick Monthly Winners

SELECTING the monthly winner for the ideas appearing on these two pages is never easy. We have never had a tie for first place, but have come very close to it several times. The committee of three safety engineers who select the winners each month do so by rating each of the ideas presented, numerically. Usually there are only three ideas so the ratings would be first, second and third.

First choice gets three points, second choice two, third place one. If there are four ideas, first place would get four points. We pick the winner by adding up the total points allotted by the three man committee to see which idea rated the highest number of points.

All this is mentioned because of the following memo received from on of the three judges.

"SUBJECT: IDEAS THAT WORKED — MARCH '61. Man you kill me — This is the best group ever. Each one would have won in just about any other month. Is a three-way tie acceptable?"

The other judges also had a difficult time deciding which one idea they thought was best. It took a lot of thinking to choose among them. We have always suspected that one day we would have to issue duplicate awards. We still feel that way.

Nickels=No Accidents

WHEN A DEPARTMENT in the Marathon Division of the American Can Co., Menasha, Wis., completes 500 consecutive man-days without a disabling injury, a card like the one shown is mailed to all the section's employees. Two nickels are glued to the card to form the zeros. If the consecutive no-injury period lengthens to 700 man-days, a second card and two more nickels are sent, and so on for 900, 1000, 1200, 1400, 1500, 1700, and 1900 man-days. When a department reaches 2000 man-days, suggests Edward C. Christensen, who submitted the idea, the price of a cup of coffee might be 15¢, justifying three nickels.

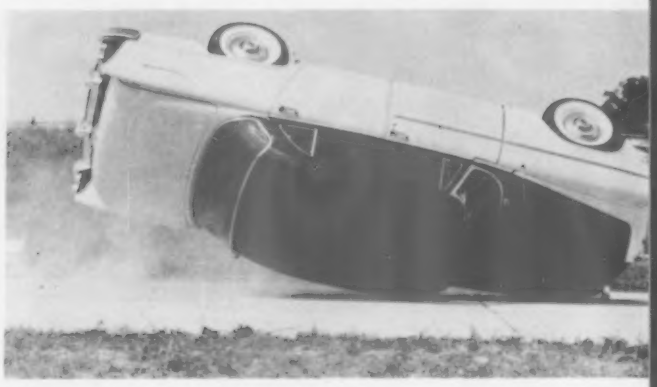
CONGRATULATIONS
STEAM POWER DEPARTMENT

Consecutive Calendar Days

Without a Lost Time Injury

Enjoy your next "coffee break" in celebration of your having passed a recognized milestone in Safety. As coffee is often deemed as a stimulant to keep one alert, may this gesture inspire you onward toward the next milestone in SAFETY.

L. S. SABATKE, Plant Manager



By WILFORD E. PARK, M.D.

Chief, Occupational Health Service,
Minneapolis Health Department,
Minneapolis, Minn.

A Physician Examines Off-Job Jeopardy

Most accidents are caused by mental and physical failings. Here are one doctor's opinions on these human deficiencies

SOME employers find absenteeism due to off-job accidents runs as high as 8 to 10 times the absenteeism caused by on-job mishaps. National statistics show nearly 70 per cent of all fatal accidents among workers occur off the job, and more than half resulting in workman disability take place away from the job.

With this toll of death and disablement it's obvious an employer has a large financial stake in preventing off-job accidents, aside from his personal interest in the welfare of his employees.

Research into possible prevention of accident causes finds 85 to 90 per cent of them could have been avoided if people had acted on their knowledge, or had used good judgment, or had or had not done something other than the action causing the mishap.

By far the greater number of accidents are traceable to some human failure. As a medical man I'm interested in looking into these human failures and trying to analyze them. From this standpoint we can best classify human causes of accidents into two broad areas – physical and mental.

1. Physical factors. The physical factors which are most important are: (a) changes due to actual disease (b) changes due to excessive stress and (c) changes due to extraneous substances which alter normal physiology.

(a) *Impairments caused by disease.* Man is subject to many diseases. Any of them may interfere with normal physiological functions and reduce his capacity to control a situation. The result may be an accident.

Certain heart diseases may strike suddenly and be the cause of an accident, if the victim happens to be driving an automobile. Cerebral hemorrhage, or a stroke, also may strike without warning, but in other cases there may be a long period of high blood pressure preceding it.

Generally debilitating diseases like anemia, leukemia, cancer, lung diseases, liver diseases, malaria, relapsing fever, and many others may produce weakness and loss of physical stamina so the patient is physically incapable of coping with an ordinary situation.

Diseases such as arthritis and various neurological and muscle diseases cause impairments of muscle and joints so the patient is unable to hang on or perform normal movements.

In diabetes the patient may lapse into unconsciousness with diabetic coma, if the disease is uncontrolled. If controlled by insulin, there is the ever-present possibility the patient may suffer an insulin shock or hypoglycemia. This, too, quickly develops into an unconscious state which may bring on an accident.

Diseases of the ear may produce deafness, dizziness, and loss of normal balance. Impaired vision, impaired depth perception, incoordination, and nystagmus are all eye conditions that may be the physical cause behind an accident.

(b) *Impairments caused by excessive stress.* In all of us there is a limit to the amount of stress we can endure and continue to function normally. This stress limit is much lower in the untrained or unconditioned individual. The trained soldier, commando, or astronaut can tolerate much more stress than you and I can. Muscles can hold on only so long. Then the grip is lost and the victim quietly lets go, as so often happens when men are clinging to an overturned boat.

Forms of stress we might mention are excessive cold,

Left: Physical ailments don't wait until you get home from a drive to undermine you. Here, a driver collapses at the wheel, with resultant disaster to himself and to his vehicle.

Below: Whether from a bad rung, dizziness, or just plain inattention, many a home handyman has found himself much like this man — at the bottom of a ladder he thought himself safe on.

excessive heat, intense light, excessive noise, heavy load, cramped position, extreme fatigue, prolonged period without sleep, high altitude, rapid acceleration, rapid deceleration, extreme thirst, or starvation. Any of these will impair even an otherwise normal individual so an accident is likely to happen.

(c) *Impairments caused by extraneous substances.* These are drugs taken into the body by mouth, or environmental gases or vapors moving into the body through the lungs or skin. Among drugs we might mention are narcotics, antihistamines, streptomycin, sulfonamides, sedatives, and tranquilizers commonly given by or prescribed by doctors. Any of these drugs may slow up reaction time and hinder judgment so the individual is unable to react quickly or correctly.

This means many people under the influence of such drugs are temporarily unsafe drivers. In this same class are alcohol, anesthetics, and vapors from several solvents similarly impairing judgment and normal reactions.

Carbon monoxide, which sometimes seeps through the floor of a car and slowly puts the driver to sleep, is another extraneous substance that can cause accidents.

Amphetamine and similar drugs sometimes taken by automobile drivers to keep awake often produce delusions and fantasies believed to lead to unreasonable actions and to traffic accidents.

2. Mental factors. For description we divide mental factors entering the cause of an accident into five convenient areas: (a) brain disease (b) automatic or instinctive reactions (c) mental slipping (d) bad habits and (e) poor judgment.

(a) *Brain disease.* Epilepsy may well be under this category. Its basis is often organic in nature. The epileptic may have a convulsion and through his unconscious twitching movement cause injury to himself or others, particularly if machinery or dangerous substances are in the vicinity.

Cerebral vascular disease is a condition of the blood vessels of the brain in which the brain is starved for blood or oxygen. This condition may lead to small brain hemorrhages or little strokes resulting in spotty softening of the brain. These diseases lead to inability to think clearly and act quickly and may be responsible for an accident.

All forms of mental disease fall into this category. A mentally deranged person may commit murder. Even some mild forms of psychosis may be the underlying cause of an accident.

(b) *Automatic or instinctive reactions.* Most of us will jump if a pin is suddenly stuck into us, or if there is a sudden loud noise. Sometimes our sudden movements may bring down disasters much more damaging than if we had sat quietly on the pin.

Sometimes a sudden explosion or fire may so unbalance us that we go into a panic and, in our unreasoning clawing to escape, may cause more death and destruction than the original incident.

(c) *Mental slipping.* This term covers many conditions causing the mind to wander from the immediate situation it should be concentrating on. In this category we apply such terms as mental distractions, daydreaming, mind wandering or inattention.

Sometimes the cause for such mind wandering may be found in personal troubles which prey on the mind, such as financial difficulties, business worries, marital problems, or imminent sickness or death in the individual's family.

Sometimes when an automobile driver is following a long straight road, he may approach a condition described as highway hypnosis. Or he may become so

sleepy his eyes begin to close. These may well be normal physiological reactions, but they may lead straight to an accident.

Another form of mental slipping is one in which normal, reasonable behavior is crowded out by an intense emotion – frustration, anger, exhilaration, or euphoria. Under such circumstances the person doesn't care whether he has an accident or not. In fact, it might be said that he is subconsciously looking for an accident.

Below: Mental disturbances are at the root of many accidents. This woman, driven beyond the limit of her emotional endurance, finds to her horror that in her distraction she has inadvertently started a fire.

(d) *Bad habits.* Habits of behavior often are acquired early in life, and when bad they may become a lifelong handicap. Habitual behavior becomes so automatic there is little thinking associated with it. Automatic behavior due to bad habits can easily lead to disastrous consequences.

In bad habitual behavior we can trace the foolish act which may lead to an accident.

(e) *Poor judgment.* Poor judgment is expected of children and people who have not had enough experience, education, or training to enable them to make wise decisions.

We expect teen-age immaturity to change into well-adjusted, self-disciplined adulthood, but such is not always the case. Some people never mature emotionally. They retain adolescent attitudes all their lives.

Probably more males fail to mature emotionally than females. You often hear the expression, "He is just a big boy," but you don't often hear of a woman behaving like a teen-age girl. Perhaps this is why men have more accidents than women.

These immature adults are our problem people. They are the accident-prone individuals. They exercise the poor judgment of teen-agers and are responsible for a large proportion of all accidents.

To this group, who cause accidents through poor judgment, add normal adults who cause accidents simply through lack of knowledge. In this group are the large number of new do-it-yourself fans. They attempt hazardous activities without sufficient training or knowledge.

Consequently, diseases causing physical and mental impairment and setting the stage for an accident are medical problems, and the approach to a solution must be through medical science and public appreciation of the ravages of disease.

In the effects of certain drugs, prescribed or self-administered, and in the effects of excessive stress and environmental conditions, we find an overlapping of medical interests and public interests. There may even be a conflict of medical advice with the desire of people to do as they like.

This is well illustrated in the consumption of alcohol, self-administration of sleeping pills, the pressure for doing something the cheapest way regardless of the damage to somebody's health, the passion for self-indulgence regardless of consequences.

Obviously, prevention of accidents is not a simple matter. It's not something any one group can solve. Accident proneness is an attribute first of all of our most immature people. But in a broader sense our whole civilization is immature.

We don't know enough about our environment. We don't know how to harness and control the power and marvelous forces of the universe in which we live. We don't know how to control our own emotions. We don't know how to get along with other people and other nations.

Control of accidents lies in the direction of more training, more education, more research into human reactions, better application of knowledge, and better adjustments by all of us in every phase of our lives in the common struggle of man toward maturity and self-realization.

TV Shows Ideal Approach to Safety

Concern for safety at the Boettecher, Colo., Ideal Cement Co. works was dramatized recently when TV cameras from KLZ-TV in Denver toured the plant. The resultant half-hour telecast, one in a series of Public Service Co. "Panorama" shows, did much to convince viewers that Boettcher cares for its workers as well as its product.

Along with operations in the company's mills, kilns, packhouse, quarry, and testing laboratory, the cameras followed Robert Halliday, mill foreman, to an outdoor safety meeting on the lawn in front of the plant. Backdrop for the session was the mammoth (7,200 lb.) Portland Cement Association award presented in 1950 for 1,000 consecutive accident-free days. The trophy, cast in concrete, has been reawarded to this safety-conscious firm six times.

480 Busy Minutes . . .

. . . fill this safety man's agenda with a pursuit of accident prevention that is hard on shoe leather. But it's paying off for Olin Mathieson plant and personnel

After checking the morning's paper work, O-M safety man Edward Fappiano stops to see the plant nurse. Part of his job is to assure that minor injuries are treated promptly to prevent complications.

Maintenance department employees review accidents and lay out policies for safer operations. Fappiano holds such meetings in all plant departments to let workers present suggestions and problems.

With his assistant, Leon Voland, Fappiano makes an inspection tour of emergency and fire escape facilities at the research building. Such tours are followed by directives on conditions needing improvement.

WHEN Edward Fappiano goes to work each day he has 5,500 important things on his mind — the employees at the Winchester-Western Division plant of the Olin Mathieson Chemical Corp. in New Haven, Conn.

Fappiano's job, safety supervision for the operation, requires constant inspection, observation, analysis, and close contact with company employees. It means leg work.

The effect of his daily rounds are impressive. In 1960 the plant had a frequency rate of 0.28, representing three disabling injuries. Since the last injury, more than six million safe man-hours have been worked.

Above right: W. Miller Hurley, Winchester-Western general manager, (second from right), supports safety by accompanying Fappiano into shops. Below: Fappiano attends emloyee fire-fighting training drill.

Fappiano and a barrel shop foreman instruct an employee on the safety rules for a new automatic lathe. Safeguarding or elimination of hazards through use of guards is a daily part of Fappiano's job.

Sitting down after a long day on his feet, Fappiano watches a plant employee being fitted with safety shoes. He checks constantly to see that his men have the proper safety equipment for the jobs they do.

Here's one company that practices its theory—safety depends on individuals

Workers Take Trip... Then Tell Story

DURING the past seven months nine employees of Chemstrand Corp., Pensacola, Fla., have been telling the exciting story of their trip to the National Safety Congress to every fellow employee they can persuade to listen.

Why? Because the company believes any successful safety effort revolves around individuals. To back up this belief, the firm sent Chemstrand's Safety Director Guy Booker, Emerson Boner, and nine other plant employees to the 1960 Congress in Chicago.

As Jim Hassell of the Engineering Department put it: "At the Congress we found how important it is to be constantly aware of the need for safety." And this is what the nine-person delegation has been doing – communicating this awareness to the rest of the company.

Most of the nine are hourly workers. Each member of the delegation was chosen for the 1960 trip because of his or her ability to tell the safety story effectively to other workers.

Here are several comments by these delegates:

Doris Atkins (Drawtwist Area 1): "Quite a few people stopped us and mentioned the company's safety accomplishments – The safety equipment displays and the thousands of people promoting safety are beyond imagination."

Bill Lavoy (707 Lab): "I got a lot of valuable information from experts visiting the Congress from abroad. We exchanged ideas and gained new ideas from exhibits. These showed us the latest and finest gear in the safety field."

Ada Peebles (Beaming): "I found that many people attending the Congress were already familiar with safety fundamentals, but they were new and interesting to me. I got a great deal out of every lecture and demonstration I attended."

Paul Savage (C. P. Spinning): "It was wonderful to hear men who've dedicated their lives to accident prevention. – It's hard to express things that develop your attitudes toward safety, but I'm sure I've got a good many ideas to promote our safety effort."

Billy Cox (C.P. Area): "In 'Productive Creativity' Dr. True emphasized action in safety, that without action our modern world would be minus its necessities and conveniences.– I'm going to put safety to work for myself and others."

Jim Hassell (Engineering): "I was particularly interested in the discussion on industrial pipe and gas installation, because it has to do with my job. – The speakers brought out how important it is to be constantly aware of safety."

Joe Fuller (Intermediates): "I was impressed with the different types of equipment exhibited. – One highlight was talking through interpreters with two South American safety directors. Their safety problems are much like ours."

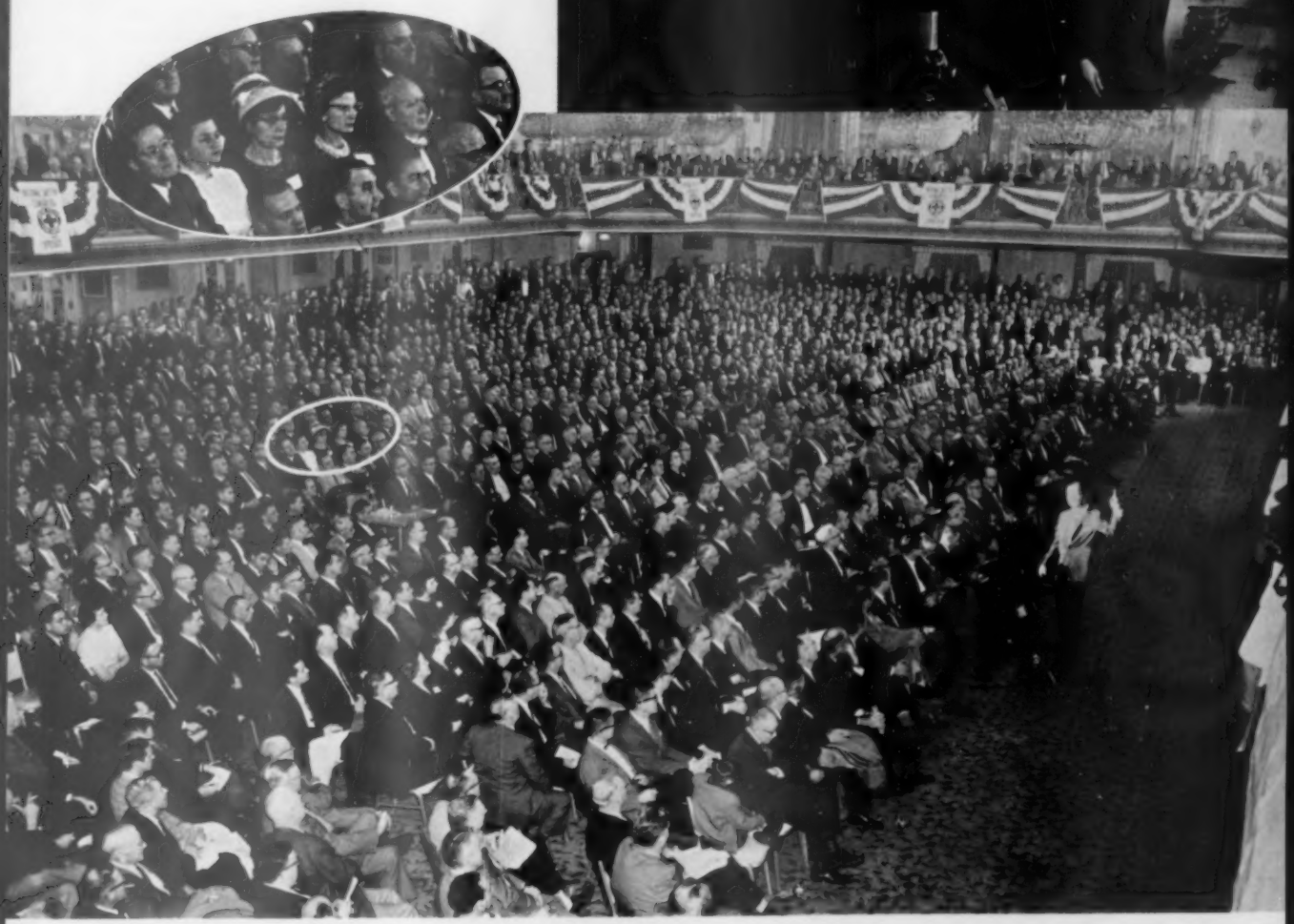
Helen Lewis (Inspection): "I enjoyed the session on 'Ideas' most of all. It pointed out nobody is too small to grow intellectually, and ideas help mankind grow continuously. – I hope to put safety in the minds of each worker."

Bud Lank (Nylon Development): "The 'Let's Pretend' session by the Textile Division impressed me. We were blindfolded for 20 minutes and had a hard time doing even small things. It makes you think about eye protection."

Right top: Jim Hassell (center foreground) extends a hand of greeting to Dr. G. Herbert True (left), who spoke dynamically on safety during the Congress' early morning sessions. Remainder of the delegation looks on.

Right bottom: Chemstrand group views one of the more than 185 safety equipment displays which attracted experts from all over the globe to the National Safety Congress.

Below: A major portion of the Congress' delegates crowded the ballroom of Chicago's Conrad Hilton Hotel each morning to hear Dr. G. Herbert True. Helen Lewis, Doris Atkins, Ada Peebles and Guy Booker (see inset) were eager listeners. The rest of the delegation sat out of camera range at left in the standing-room-only audience.



A NATIONAL SAFETY COUNCIL
TECHNICAL SERVICE

DATA SHEET 505

THREE-KNIFE FLATBED TRIMMERS

Copies of this data sheet will be available for order within 30 days.

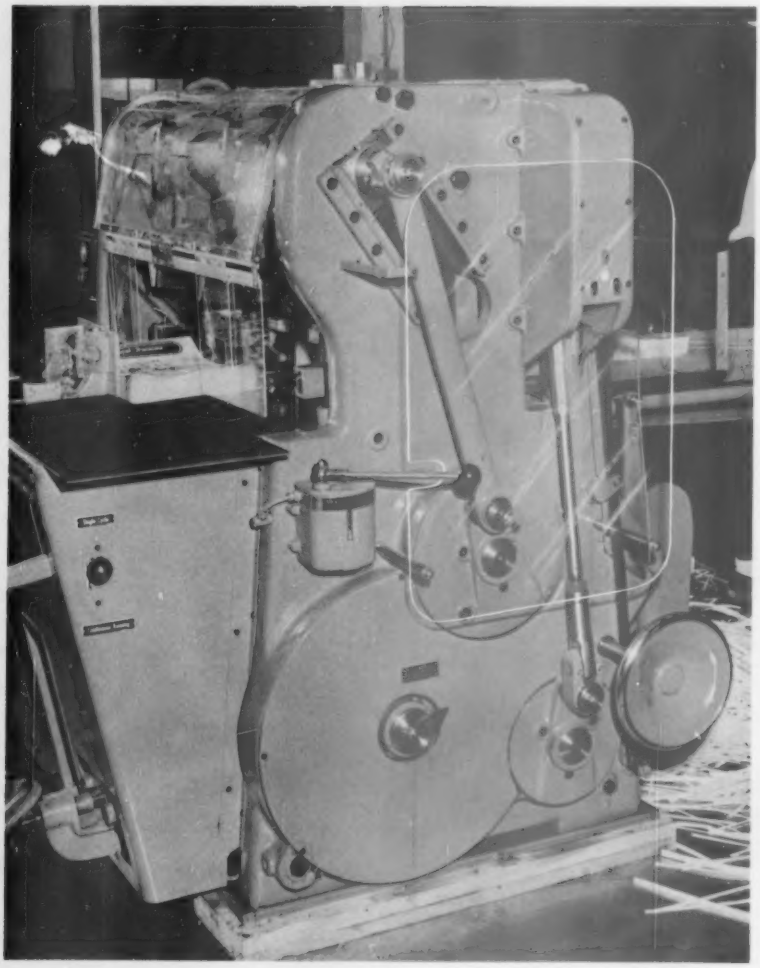


Figure 1. Automatic feed trimmer with work positioned against head and back gauges of conveyor. (Photos courtesy Lawson Company, Division of Miehle-Goss-Dexter, Inc.)

This data sheet is one of a series published by the National Safety Council, reflecting experience from many sources. Not every acceptable safety procedure in the field is necessarily included. This data sheet should not be confused with American Standard Safety codes, federal laws, insurance requirements, state laws, rules and regulations, or municipal ordinances.

Introduction

1. Two types of three-knife flatbed trimmers find extensive use in pamphlet and case binderies. One type involves manual handling of stock, while the other has an automatic feed. This data sheet discusses safe operation and guarding of both types.

2. Three-knife flatbed trimmers are used to trim the front, head, and foot of books, pamphlets, flyers, and other printed materials. The books may be side-stitched, saddle-stitched, or sewn. Trimming sizes range from approximately 2 in. by 3⅛ in. to 16 in. by 24 in. Maximum trimming thickness is 6 in.

3. The elements of these trimmers are bed, head and back guides (gauges), infeed conveyor (automatic type only), clamp block (which allows for variation in thickness and contour of work), head knife, foot knife (or tail knife),

front knife, guards (shields), clamp control (manual feed type), and trip bar (automatic type only).

Hand Feed Trimmers

4. On a hand-feed trimmer, the lift is jogged on the head and the backbone, and positioned manually against the head and back gauges.

5. The clamp is fitted for each job with a clamp block, which provides even pressure on the work by compensating for variation in thickness and irregular contour of the work. The clamp can be applied to the work by foot pedal or can be actuated by an air cylinder and controlled by an easy-to-operate valve or an electric foot switch and solenoid valve. The latter arrangement is much easier to operate than a foot pedal.

6. The knives are then engaged by a two-hand mechanical clutch throw in or by an electrically operated clutch. The head and foot knives trim at the same time, the front knife being synchronized to trim after the head and foot knives have withdrawn from the work.

7. To discourage the operator from attempting to hold the work until the clamp is applied, he should never be permitted to tie down one of the mechanical throw-in levers. An electrical system that cannot be "cheated" is available for this purpose.

8. Guards should be transparent shields to allow good visibility. They should prevent the operator from getting his hand into the trimming area and should stay in their "down" position until the side knives are clear and the front knife has completed its cycle.

9. When trimming cycle is complete, the shields should return to their "up" position to permit removal of the trimmed product.

10. The operator should never be allowed to pin up a barrier guard while a trimmer is operating through production cycles.

Automatic Feed Trimmers

11. On an automatic-feed trimmer (Figure 1), the lift is jogged on the head and the backbone, and positioned against the head and back gauges of the infeed conveyor (Figure 2). The conveyor clamp carries the pile of work through an adjustable opening in the transparent barrier on the front of the machine (Figure 3) and positions it under the pressure clamp.

12. The pressure clamp is fitted with a clamp block to provide even pressure on the work by compensating for variation in thickness and irregular contour of the work. The pressure clamp is automatically applied, and trim is made on three sides of the work. The head and foot knives trim at the same time, and the front knife is synchronized to trim after the head and foot knives have withdrawn from the work. The infeed conveyor then delivers the work to the conveyor on the opposite side of the cutter.

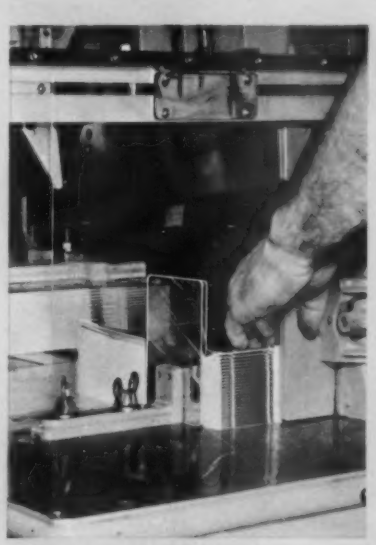


Figure 2. Operator positions material against infeed gauges while other material is under pressure clamp ready for cutting.

13. A trip bar is located below the front edge of the bed (Figure 4). Slight pressure on this bar stops the cutter instantly. The transparent barrier on the take-away side of the trimming area is mechanically interlocked to stop the cutter if it is raised out of its "down" or "closed" position.

General Precautions

14. For safe and efficient operation of both types of trimmers, ample floor area should be provided around the machines and load layout spaces should be conveniently located.

15. Machines should be kept clean and free from scrap at all times. Take-away boards or air ducts should be provided to dispose of trimmings.

16. On both automatic-feed and hand-feed types, the necessary exposure during makeready can result in accidents because the operator makes his adjustments with the barrier guards pinned up or removed. Common injuries are cuts incurred from contact with the cutting edges of stationary knives and during the handling, changing, and honing of

Figure 3. Jogging the work, operator prepares to use the infeed gauges.

knife blades or the changing of cutting sticks.

17. Only strict supervision and extreme caution can prevent these injuries since they occur while one or both guards are not in protective positions. Sheaths should be placed on all cutting edges when knives are to be removed, adjusted, and replaced and when cutting sticks are to be changed.

18. The most common dangerous practice with the automatic-feed cutter is operating with the front shield removed. Ordinarily, there is no reason for the operator to get near the trimming area; but, with the shield removed, he is often tempted to make an impulsive grab into the danger area.

19. The supervisor should never permit an operator to run a cutter without both protective shields in place. An interlock is installed on some machines to prevent operation of the cutter if the front shield is not in position.

20. If a trimmer repeats, it should immediately be taken out of service and repaired by a qualified mechanic who knows the operation of the particular machine.

Maintenance

21. Maintenance checks should be given to all working parts and adjustments at least once per week. Clutch and brake adjustments should be made only by competent mechanics authorized to do so. Moving parts should be oiled daily.

ACKNOWLEDGMENT

The original draft of this data sheet was prepared by F. N. Burt, Co-Chairman, Engineering, Maintenance, and Electrification Committee of the Printing and Publishing Section, National Safety Council. Special assistance was rendered by E. M. Abrams and W. G. Schaaff of The Lawson Company. Content has been extensively reviewed by members of the National Safety Council and representatives of chapters of the American Society of Safety Engineers. The data sheet has been approved for publication by the Publications Committee of the Industrial Conference of the National Safety Council.

Courses Scheduled for Industrial Hygiene Engineering, Chemistry

Two-week courses on industrial hygiene engineering and industrial hygiene chemistry will be held at the Occupational Health Research and Training Facility, 1041 Broadway, Cincinnati 2, Ohio, beginning June 5, 1961.

The courses, announced by the Division of Occupational Health, U.S. Public Health Service, will be followed June 19-23 by one-week courses on dust evaluation techniques and the analysis of silica.

Attendance in each course is limited to 12 engineers and 12 chemists. In event of over-subscription, applicants will be given preference for repeat courses scheduled for a two-week period beginning October 9.

No tuition is charged. Expenses must be borne by the applicant or his employer. The training manual and other literature will be provided free to students.

Figure 4. This view of a three-knife trimmer shows operator with leg against safety trip bar.

We aim to practice what we preach

The little sign you see on the dashboard above sums up our Bell Telephone safety philosophy.

It's posted in every Bell System vehicle and building—a daily reminder for our employees.

But does it work? Let's look at our vehicle safety record and see:

There are 90,000 Bell System trucks and cars on the road every day. These vehicles pile up more than 800,000,000 miles a year—in all kinds of weather.

Yet, our accident rate is only 1.08 per 100,000 miles.

Safe driving is just one aspect of the safety practices established for Bell Telephone employees. And in all areas of our work, we aim to practice what we preach.

BELL TELEPHONE SYSTEM

According to Z-16

– From page 16

(a), and the doctor's indication that the disability arose out of this incident satisfied part (b). Although the injury occurred during the employee's normal duties, it arose out of a specific incident, and in accordance with 5.2 should be considered a work injury.

Case 529. An employee was performing her normal, regular duties which involved stamping plastic composition boxes 10 in. x 17 in. x 9 in., weighing 12 lbs. She normally grasped these boxes by the top edge at both ends, slid them off the bench one at a time, and carried them about 10 feet to a machine. In this case, she grasped the near end of the box with her right hand and started to slide the box toward the edge of the bench. As she reached over to grasp the far end of the box with her left hand, her wrist watch struck against a small machine on the bench. She hesitated momentarily, and at that moment the box had reached a position such that the weight of it caused it to tilt forward and start slipping from the bench. The employee was still holding onto the box, but in attempting to keep it from falling, she twisted her back. The company did not question the injury, but only that it had occurred during the employee's regular work.

Decision: The Committee concluded this case should be included in the company's work injury rates. Although it occurred during the employee's normal, regular duties, it arose out of a specific incident, thus meeting the requirements of 5.2.

Case 501. While performing his normal duties of lifting a file drawer from a cart and placing it in a file cabinet, a records clerk felt a soreness in his back. Four days previously he had twisted his back while bowling. The company doctor believed that the first injury was the cause of the resulting backache, and that it was not aggravated by lifting the file drawer.

Decision: The Committee ruled that this case should not be included in the company's work injury rates. Part (b) of 5.2 was not satisfied since the doctor stated that lifting the file drawer was not a factor in the man's present back condition.

the New V.I.P.

WORN BY VERY IMPORTANT PEOPLE—(LIKE YOU!)

You can't tell this slim profile Iron Age safety oxford from a high styled regular shoe. A new, low silhouette steel toe box (which meets ASA specifications) eliminates all the tell-tale bulk. It's as easy on the foot as it looks. The shoe pictured is just one of several styles in our new VIP line.

These "gay deceiver" safety shoes offer the highest quality value to you who supervise—to those who like their comfort, but always must look their best, too. Get full details from our representative or write Iron Age Safety Shoes, 1205 Madison Avenue, Pittsburgh 12, Pa.

Iron Age

Iron Age
SAFETY SHOES

CIRCLE 14 ON READER CARD

Calendar Contest For February

Motorist Mike let his busy mind stray
From the wheel to a home chore that day,
Then discovered too late
That he must concentrate

. . . . . .

Winner of the $100 first prize in the February National Safety Council Safety Limerick contest is Mrs. Adeline Fixman (individual member), St. Louis, Mo. She completed the limerick with this line:

"FOR DISTRACTION IN ACTION CAN SLAY."

The monthly contest appears on the back pages of the Council's calendar. The theme for the February contest was "Concentrate on Your Job."

Second prize of $50 went to Ray Blonigan, San Manuel Copper Corp., San Manuel, Ariz., for this entry:

"Don't 'be up in the clouds,'—OR YOU MAY!"

Miss Alice Ragland (individual member), Lexington, Ky., won the third prize of $25. Her line was:

"To get home forget home on the way!"

The 30 winners of $5 prizes are:

George Wallisch (individual member), St. Paul, Minn.

Mrs. Wilma Stegmuller, California & Hawaiian Sugar Refining Corp., Aiea, Oahu, Hawaii.

Miss Dorothy E. Wilder, Commonwealth of Massachusetts, Division of Employment Security, Boston, Mass.

Mrs. Gladys N. Smith (individual member), Mayfield, Ky.

Mrs. Betty Ensle, Missouri Pacific Railroad, Osawatomie, Kan.

Melvin Friedman, U.S. Patent Office, Washington, D.C.

Mrs. Jane Hogue, (individual member), Ponca City, Okla.

Mrs. D. E. Ahrendt, Firestone Synthetic & Latex Co., Akron, Ohio.

Mrs. Estelle Cain (individual member), Collinsville, Ill.

Mrs. Rauha E. Green, Plum Creek Lumber Co., Columbia Falls, Mont.

Jack Ramsay (individual member), Duluth, Minn.

C. W. Schulmeyer (individual member), Frankfort, Ind.

Jesse H. Long, TVA, Construction Dept., Wilson Dam, Ala.

Mrs. H. Parker (individual member), Amsterdam, N.Y.

Jim Wing (individual member), Duluth, Minn.

H. T. Orsborn (individual member), Elgin, Ill.

Miss Nan Noviscky (individual member), Rome, N.Y.

Donald W. Theisen, Institute of Paper Chemistry, Appleton, Wis.

Mrs. Ethel A. Silson (individual member), San Luis Obispo, Calif.

Mrs. Walter Harju, Oliver Iron Mining Div., Virginia, Minn.

Mrs. Howard R. Cox (individual member), Bandon, Ore.

Max Levin, U.S. Post Office, Milwaukee, Wis.

Robert C. Moison, Forbes Lithograph Co., Lynn, Mass.

Mrs. R. C. Blalock, Henry County Livestock Assn., Abbeville, Ala.

Herbert Bertram, National Cash Register Co., Dayton, Ohio.

Richard H. Franclemont (individual member), Corfu, N.Y.

Miss Marguerite Adams (individual member), Cincinnati, Ohio.

H. E. Keltz, Bethlehem Steel Co., Fuel and Steam Dept., Baltimore, Md.

Walter Polkinghorn, American Oil Co., Whiting, Ind.

Mrs. Earl Boyle, Buckeye Steel Castings, Columbus, Ohio.

What's the idea behind Workmen's Compensation?

Wausau Story

by The Honorable
THEODORE W. BRAZEAU
Member of the Wisconsin State Legislature in 1907 and 1909

"When I was elected to the State Legislature 54 years ago, the subject of Workmen's Compensation was certain to provoke a great old battle.

"The battle was one I felt had to be fought.

"As a practicing attorney in Wisconsin Rapids, much of my work for the lumber and paper companies there involved personal injury cases. I strongly felt the injustice of turning an injured workman away without a cent of compensation.

"At the same time, the situation was far from satisfactory for the employers too. The old Liability Laws practically made court action necessary. In fairness to both sides, a change had to be made.

"Such a change was conscientiously worked for. I'm proud that Wisconsin was the first state to adopt a Workmen's Compensation Law that was to be upheld in the courts as constitutional. As soon as the Law went into effect in 1911, Employers Mutuals of Wausau opened for business.

"In saluting Employers Mutuals of Wausau on their 50th anniversary, I recall many of the founders of this insurance company. I knew them to be honorable men. They had as their slogan 'Insure *for* your men, not *against* them.' They established a tradition of fairness, integrity and the highest of principles that is evident today. It comes as no surprise to me to hear that Employers Mutuals people are now known throughout the country as 'Good people to do business with'."

Mr. Brazeau visits the Senate Chamber in Wisconsin's Capitol in Madison. "If you were 88 years old, as I am," Mr. Brazeau says, "you would refer to this as 'The New Capitol'. Construction began in 1907. I was then serving my first term in the Legislature. I would not venture to say which is the more fitting monument to my generation: this magnificent building, or the progress in far-sighted legislation made during those years."

* * *

Employers Mutuals of Wausau has 138 offices throughout the country to provide prompt and thorough service for policyholders. We write all forms of fire, group health and accident, and casualty insurance (including automobile). We are one of the largest and most experienced underwriters in the field of workmen's compensation. We are proud of our established reputation for fast claim service and our leadership in the field of industrial accident prevention. Consult your telephone directory for your nearest Employers Mutuals representative or write us in Wausau, Wisconsin.

Employers Mutuals *of* Wausau

PIONEER UNDERWRITER OF WORKMEN'S COMPENSATION INSURANCE IN AMERICA

FOR 50 YEARS
"Good people to do business with"

CIRCLE 15 ON READER CARD

Occupational Films Enter 1961 Contest

Nineteen occupational safety films are among the 69 films entered in the 1961 award program sponsored by the National Committee on Films for Safety. The annual awards are designed to stimulate production and use of safety films, raise the quality of films produced, establish film evaluation standards, and recognize film excellence.

The National Committee on Films for Safety judges entries on the basis of technical accuracy, effectiveness of message, audience appeal and quality of photography and sound. The committee is cosponsored by these organizations:

American Association of Motor Vehicle Administrators, American Automobile Association, American National Red Cross, American Public Health Association, American Society of Safety Engineers, American Standards Association, Association of Casualty and Surety Cos., Association of Safety Council Executives, Automotive Safety Foundation, Council on Industrial Health, Insurance Institute for Highway Safety, Auto Industries Highway Safety Commission, International Association of Chiefs of Police, National Association of Automotive Mutual Insurance Companies, National Association of Manufacturers, National Association of Mutual Casualty Companies, National Fire Protection Association National Safety Council, U.S. Bureau of Public Roads, U.S. Department of Air Force, U.S. Department of Army, U.S. Department of Navy, and U.S. Junior Chamber of Commerce.

The occupational safety films to be judged in the awards program are:

Non-theatrical Motion Pictures (16mm)

A Day With Maintenance of Way—30 min., color, instructional. Illustrates safe work practices of railroad maintenance-of-way employees. Sponsor—Missouri Pacific Railroad, St. Louis 3, Mo. Producer—Missouri Pacific Railroad Co.

Electrical and Electronic Safety—9 min., B & W, instructional. Depicts circumstances of a fatal accident on electronic equipment. Sponsor—United States Air Force, AACS-MATS, Scott Air Force Base, Ill. Producer—Air Photographic and Charting Service, Orlando AFB.

Flame Propagation—20 min., color, instructional. Demonstrates hazards associated with misuse of explosionproof equipment. Sponsor — American Gas Assn., 420 Lexington Ave., New York 17. Producer — Kennedy Publications, Inc.

Flammables Engineering — 26½ min., color, instructional. Presents fire protection principles applied to flammable substances. Sponsor—The Protectoseal Co., 1920 S. Western Ave., Chicago 8.

New PAINT SPRAY RESPIRATOR

BY PULMOSAN

one cartridge...
one compact pre-filter...
wonderful on the job!

U. S. BUREAU OF MINES APPROVED

Now you can have positive protection against all paint sprays and vapors... lead-based, enamels and lacquers... with single-cartridge comfort. Approved by the U. S. Bureau of Mines, the new C-251 Paint Spray Respirator joins the Pulmosan *interchangeable* C-200 respirator series, with its many exclusive advantages:

- *Lightweight, compact, easy-to-wear single cartridge*
- *Convenient re-usable plastic clip cap*
- *Independently replaceable pre-filter and cartridge*
- *Paint spray cartridge interchangeable with other C-200 filter units*

Yes, it's economical and easy to add paint spray protection to any C-200 series respirator you now have. Or you can start your C-200 series now with the C-251 for paint sprays, and add interchangeable filter units for any and all hazards for which respirators are recommended.

PULMOSAN STOPS Accidents

For complete information and prices, write:

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CIRCLE 16 ON READER CARD

Producer—Audio Productions, Inc.

Hard Hats and Thinking Caps—29½ min., color and B & W, inspirational. Emphasizes the necessity of alertness to safety for structural iron workers. Sponsor — American Bridge Div., United States Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa., Producer—Mode-Art Films.

The High-Low Bid—27 min., color, instructional. Tells importance of safety performance to management in construction industry. Sponsor—Employers Mutuals of Wausau, 407 Grant St., Wausau, Wis. Producer — Employers Mutuals of Wausau.

The Man Who Didn't Believe in Accidents—18 min., B & W, inspirational. Brings out personal aspects of accident prevention for dairy employees. Sponsor — Packaging Equipment Division, Ex-Cell-O Corp. (in cooperation with Milk Industry Foundation), 1200 Oakman Blvd., Detroit. Producer—Robert J. Enders, Inc., MGM Studios.

115 Volts—Deadly Shipmate—19 min., color, instructional. Sponsor — U.S. Dept. of the Navy, Bureau of Naval Weapons, Washington 25, D.C. Producer—Depicto Films Corp.

Propellant Plus Heat—20 min., color, Tv/No, instructional. Shows precautions required in handling to prevent ignition of solid propellants. Sponsor—Thiokol Chemical Corp., Redstone Div., Huntsville, Ala. Producer—Thiokol Chemical Corp.

The Quota—25½ min., color, Tv/No, inspirational. Dramatizes accidents that occur to construction equipment operators. Sponsor—Clark Equipment Co., Construction Machinery Div., Benton Harbor, Mich. Producer—Pilot Productions, Inc.

Safety in Highway Surveying—25 min., color, instructional. Sponsor — None. Producer—Bureau of Public Roads, Dept. of Commerce, 1717 H St., N. W., Washington 25, D. C.

Safety Is Always Our No. 1 Business. Instructs new employees in the importance of safety in company operations. Sponsor — Caterpillar Tractor Company, Peoria, Ill. Producer—Caterpillar Tractor Co.

Safety Wise (Series of 3), 10 min. each, B & W, inspirational. Sponsor—National Safety Council, 425 N. Michigan Ave., Chicago 11. Producer—Cal Dunn Studios.

Help Yourself to Safety. Points up employee responsibility to recognize and correct unsafe acts and conditions.

Not Even One Chance. Describes how a worker changes his attitude toward chance-taking.

Safe As You Know How. Shows how a worker can develop safe personal work habits.

Static Electricity—22 min., color, instructional. Describes how static electricity is generated and its control. Sponsor—American Gas Association, 420 Lexington Ave., New York 17. Producer—Kennedy Productions, Inc.

Tactical Air Command Programmed for Safety—27½ min., color, inspirational. Follows importance of training to overcome in-flight problems. Sponsor — U.S. Air Force, DIG/Safety, Norton Air Force Base, Calif. Producer — APCS, 1365 Photo Sqd., Orlando AFB.

Soundslide (35mm)

Everything Under Control—15 min., color, instructional. Teaches gas utility workers safe methods and procedures at job sites. Sponsor—American Gas Association, 420 Lexington Ave., New York 17. Producer—Kennedy Productions, Inc.

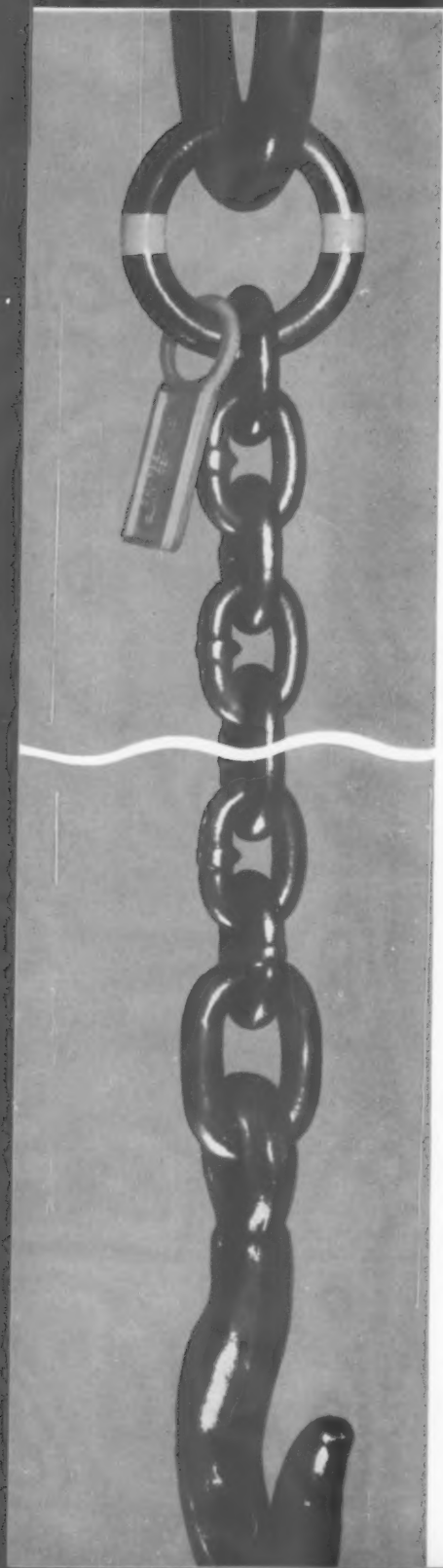
From a Bed of Pain—17¼ min., color, inspirational. Re-enacts electric shock accident and follows victim's progress through surgery and hospitalization. Sponsor—Consumers Power Co., 212 W. Michigan Ave., Jackson, Mich. Producer—Martin B. Kies.

Lift With Your Head—6 min., color, instructional. Cartoon characterization of right and wrong ways to lift merchandise. Sponsor — Firestone Tire & Rubber Co., Akron, Ohio. Producer—Close and Patenaude.

Precaution—14¼ min., color., instructional. Informs of proper use of equipment and safe handling of anhydrous ammonia. Sponsor—Phillips Petroleum Co., Bartlesville, Okla. Producer—Centron Corp.

NEW and REVOLUTIONARY...

SLING CHAINS THAT TALK



The WARNING RING* on Campbell SENTRY SLINGS tells you immediately when the sling has been overloaded . . . it elongates visibly . . . and before the chain itself is damaged.

Your eye can see the difference!

Ring remains round
Sling used properly

Ring distorted
Sling overloaded

New, revolutionary . . . Campbell **SENTRY SLINGS**—fully tested for over a year by foundries, steel fabricators and heavy equipment manufacturers, offer many important advantages. The **WARNING RING** is stronger than the chain itself. Yet it changes shape as the sling is overloaded . . . *before permanent damage occurs.* Repair is quick and easy, with a new **WARNING RING** replaced at the factory. Re-tested and re-certified Sentry Slings are again ready for regular service.

Here's How You Benefit From New SENTRY SLINGS:

- Safety programs are easier to maintain—with the **WARNING RING**'s built-in safety that protects men and material!
- Lower repair costs give larger savings than ever—normally only the **WARNING RING** will need repair!
- Immediate visual evidence of overload means easier inspection—even while sling is in use!

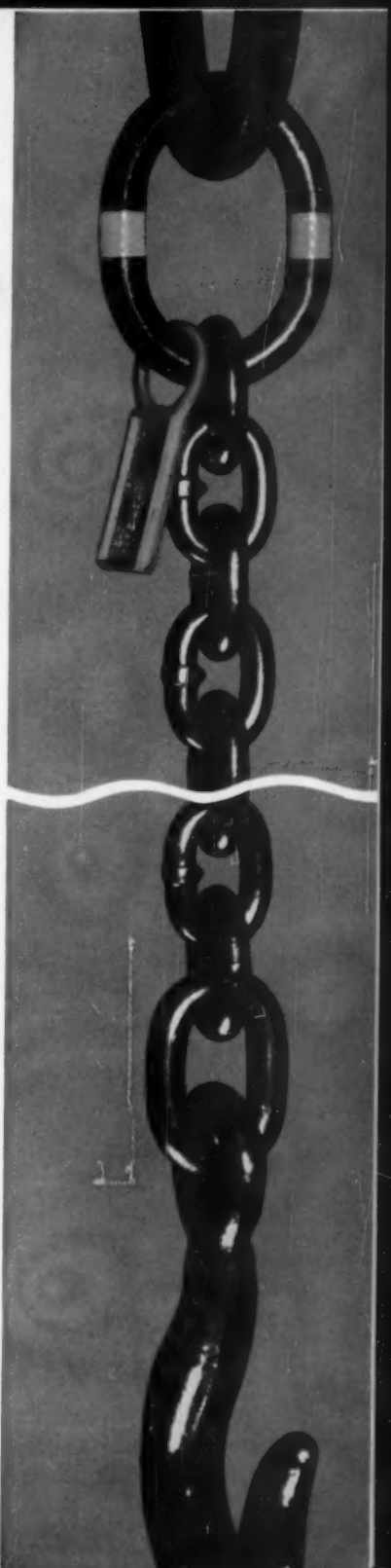
SENTRY SLINGS, available in all types, are made from Cam-Alloy steel chain only and are available at no extra cost! All slings carry the Campbell Guarantee and Certificate of Test.

CAMPBELL with the WARNING RING SENTRY SLING

CAMPBELL CHAIN *Company*

FACTORIES: York, Pa.; West Burlington, Iowa; Union City, Calif. WAREHOUSES: East Cambridge, Mass.; Atlanta, Ga.; Dallas, Texas; Chicago, Ill.; Portland, Ore.; Seattle, Wash.; Los Angeles, Calif.

*Pat. No. 2966878



These Are Winners!

. . . in '60 Industrial Section Contests

Of 19 industrial groups in competition, the average frequency rate of all entrants was 7.32, while top entrants garnered an average of 2.71

The average frequency rate determined from experience reported by 5,898 entrants in the 1960 Industrial Section Contests was 7.32 disabling injuries per million man-hours worked. The 1959 average, for 5,443 entrants, was 7.41.

Entrants represent 19 industrial groups.

The average frequency rate reported by winners of National Safety Council plaques was 2.71 – about 37 per cent of the average rate for all contestants. For 1959, the average frequency rate for winners was 1.76 – or about 24 per cent of the average for all entrants. This does not necessarily represent an increase in the average rate for winners, since contest rule changes in almost all the sections now provide for a single winner, even where several perfect records may exist. Under the new rules, in the event of several perfect records the first place plaque goes only to the holder of the perfect record which represents the most man-hours.

In addition to contests listed later, competitions on a fiscal-year basis are conducted by the Metals Section; Meat Packing, Tanning and Leather Products Section; and steel fabricators.

Complete lists of first-, second-, and third-place winners and com-

Chosen to protect your children

. . . a prime essential to all business construction

Chances are great that you pass a Gamewell fire alarm box on your way to work, because a vast majority of all municipal fire alarm systems are Gamewell systems!

For over 100 years Gamewell fire alarm boxes have stood as silent sentinels in thousands of communities. The lives and the property these systems have saved are testimony of their unerring reliability. Similar Gamewell interior fire alarm systems, with the same high standards and offering the same reliability, can be planned as part of complete plant and institutional fire protection. Safety is everybody's business . . . *our* profession.

Send for your Gamewell Flexalarm catalog with typical fire alarm installations, see how you can plan maximum protection at minimum cost. Write THE GAMEWELL COMPANY, 1364 Chestnut Street, Newton Upper Falls 64, Massachusetts. A Subsidiary of E. W. Bliss Company.

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FIRST... WHEN SECONDS COUNT

CIRCLE 18 ON READER CARD

panies receiving awards for perfect records appear in contest bulletins sent to participating companies and plants. Each bulletin contains a brief analysis of the industry's experience.

AEROSPACE

COMPLETE AIRCRAFT MFG.

Group A – Convair (Astronautics) Div., General Dynamics Corp., San Diego, Calif.

Group B – Douglas Aircraft Co., Inc., Charlotte Div., Charlotte, N.C.

AIRCRAFT AND ROCKET ENGINE MFG.

Advanced Structures Div., Subsidiary of Telecomputing Corp.

ELECTRONIC GUIDANCE SYSTEM

Hughes Aircraft Co., Field Service and Support Div., International Airport Site.

RESEARCH AND DEVELOPMENT

NASA Flight Research Center, Edwards, Calif.

BAKERY

Group A – Continental Baking Co., Ogden, Utah.

Interstate Bakeries Corp., Chicago North, Plant II.

Group B – Continental Baking Co., Little Rock, Ark.

Continental Baking Co., Wonder-Toledo.

American Bakeries Co., Fort Worth, Tex.

Ward Baking Co., Columbus, Ohio.

San Joaquin Bakeries, Inc., Fresno, Calif.

Interstate Bakeries Corp., Santa Ana–Plant No. 28.

Ward Baking Co., South Bend, Ind.

CIRCLE 19 ON READER CARD →

Continental Baking Co., Bridgeport, Conn.

Rainbo Baking Co., Louisville, Ky.

Group C – Colonial Baking Co., El Dorado, Ark.

Stroehmann Brothers Co., Altoona, Pa.

San Joaquin Bakeries, Visalia, Calif.

Continental Baking Co., Tacoma, Wash.

American Bakeries Co., Decatur, Ill.

Continental Baking Co., Greenville, Tex.

Interstate Bakeries Corp., El Centro–Plant No. 31.

Group D – Southern Bakeries Co., Charlottesville, Va.

Dandee Bread, Quincy, Ill.

Purity Baking Co., Pana, Ill.

BARGE AND TOWING

Group A – Socony Mobil Oil Co., Inc., Marine Transportation Dept., Tug and Barge Fleet.

Group B – Socony Mobil Oil Co., Inc., M/V La Crosse Socony, M/V St. Paul Socony.

CHEMICAL

DIVISION I

Group A – The Procter & Gamble Co., Ivorydale Technical Center, Cincinnati, Ohio.

Group B – Benger Laboratory, E. I. du Pont de Nemours & Co.

Group C – Union Carbide Chemicals Co., Hastings Plant, Hastings, W. Va.

DIVISION II

Group A – The Procter & Gamble Mfg. Co., Kansas City Plant, Kansas City, Kan.

Group B – Polychemicals Research Laboratory, E. I. du Pont de Nemours & Co.

Group C – Beaumont Works, E. I. du Pont de Nemours & Co.

DIVISION III

Group A – Hercules Powder Co., Kenvil, N.J.

Group B – Neville Chemical Co., Pittsburgh Plant.

Group C – B. F. Goodrich Chemical Co., Henry, Ill.

COMMERCIAL VEHICLE

Jointly sponsored by The National Automobile Transporters Association and the National Safety Council.

AUTOMOBILE TRANSPORTERS DIVISION

F. J. Boutell Driveaway Co., Inc., Flint, Pontiac, Detroit, Edinburg, Ohio, Baltimore, Ohio, Newark, N.J.

COMMON AND CONTRACT CARRIERS DIVISION

Group A – The Mason and Dixon

COPPUS BLUE RIBBON PRODUCTS

Coppus Vano® Ventilator

DON'T LET BAD AIR SLOW UP PRODUCTION!
Improve your men's efficiency, safety, health and comfort. Get rid of dangerous gases, fumes and stagnant air with a COPPUS "Blue Ribbon" Vano Ventilator. This ventilator brings fresh air to men in confined places . . . acts as both a safety device and a production tool. To keep your men's efficiency and morale high, feed them better air.

There's a portable, easily adaptable Coppus "Blue Ribbon" Ventilator to fit your specific "fresh-air" requirements. The Coppus "Blue Ribbon" is your assurance of sound workmanship and trouble-free, long lasting operation . . . at reasonable cost. Sales Offices in Thomas' Register. Other "Blue Ribbon" Products in Chemical Engineering Catalog, Refinery Catalog and Best's Safety Directory.

COPPUS ENGINEERING CORPORATION, 125 PARK AVENUE, WORCESTER 10, MASS.
Please send information to improve worker safety — health — comfort — efficiency

For Men Working:	For Cooling:	For Exhausting:
☐ in tanks, tank cars, drums, etc.	☐ general man cooling	☐ welding fumes
☐ in underground manholes	☐ motors, generators, switchboards	☐ noxious fumes
☐ on boiler repair jobs	☐ wires and sheets	☐ fumes from reactors, tanks, etc.
☐ in aeroplane fuselages, wings, etc.		

(Write here any special ventilating problems you may have)

.....

.....

Name.....

Company.....

Address.....

City.....

COPPUS
BLOWERS

Lines, Inc., Kingsport, Tenn.
Group B – F. J. Boutell Service Co., Detroit, Mich.

FERTILIZER

DIVISION I
Group A – Canadian Industries Ltd., Chatham Works.
Group B – Virginia-Carolina Chemical Corp., Baltimore, Md. Plant.
Group C – G. L. F. Soil Building Service, North Collins, N.Y.
DIVISION II
Group A – Bessemer Plant, F. S. Royster Guano Co., Bessemer, Ala.
Group B – Smith-Douglass Co., Inc., Albert Lea Plant, Albert Lea, Minn.
DIVISION III
Group A – W. R. Grace & Co., Davison Chemical Div., Charleston, S.C.
Group B – Virginia-Carolina Chemical Corp., Cincinnati, Ohio Plant.
DIVISION IV
Virginia-Carolina Chemical Co., Mt. Pleasant (Arrow Mines), Tenn.

FOOD AND BEVERAGE

DIVISION I
Hercules Powder Co., Harbor Beach Plant.
Group B – Ralston Purina Co., Nashville, Tenn. Branch.
Group C – The Pillsbury Co., Astoria, Ore.
Gov't. – Colorado, Agricultural Stabilization & Conservation, U.S. Department of Agriculture.

DIVISION II
Group A – General Foods Corp., Franklin Baker Coconut, Hoboken, N.J.
Group B – Frank N. Fleer Corp.

DIVISION III
Group A – Price's Creameries, Inc., El Paso, Tex.
Group B – Sealtest Foods, Detroit Ice Cream Plant.

DIVISION IV
Group A – Hunt Foods & Industries, Inc., Fullerton, Calif.
Group B – Jefferson Island Plant, Diamond Crystal Salt Co., Jefferson Island, La.
Group C – Fox Valley Canning Co., Hortonville, Wis.

FLUID MILK, DIVISION V
Jointly sponsored by Milk Industry Foundation and National Safety Council.
Group A – Roberts Dairy Co., Omaha, Neb.
Group B – Wayne Dairy Products Inc.
Group C – Sealtest Foods-Southern Div., Asheville, N.C.
Kraft Foods, Southern Receiving Stations, Garland, Tex.
Sealtest Foods, Metropolitan Div., Norwich, N.Y.
Sealtest Foods, Metropolitan Div., North New York District.
Sealtest Foods, Metropolitan Div., Hobart District.

DIVISION VI
Group A – General Cigar Co., Inc., Nanticoke, Pa.
Group B – General Cigar Co., Inc., Allentown, Pa.

DIVISION VII
Group A – National Distillers Products Co., Louisville Div., Louisville, Ky.
Group B – Julius Kessler Distilling Co., Inc., Athertonville, Ky.

DIVISION VIII
Group A – Pabst Brewing Co., Los Angeles, Calif.
Group B – Carling Brewing Co., Frankenmuth, Mich.

DIVISION IX
National Biscuit Co., Holland Rusk Bakery, Holland, Mich.

DIVISION X
Plantations – Oahu Sugar Co., Ltd.,

How much are you paying for clumsy hands?

490,000 hand and finger injuries, reported last year to the National Safety Council, cost industry an average of $332 each. This focuses attention on one problem faced by safety directors: Hands made tired and clumsy by stiff, ill-fitting work gloves.

On many operations requiring hand protection, it has been shown that safety and efficiency improve — and cost goes down — when this extra-flexible Snorkel glove is adopted. Its 2-piece jersey liner eliminates seams from working areas; a wing thumb and preflexed fingers provide better fit and grip; and the special vinyl coating, non-slipping even in grease, protects against abrasion and chemicals. For example:

CASE No. 622: Handling plate glass in caustic soda and nitric acid solutions, the *job-fitted* Edmont Snorkel gave better protection and surer wet grip than an expensive unlined rubber glove. Cut glove costs 79%.

Edmont makes many other gloves using plastic, neoprene and natural rubber coatings. They are *job-fitted* for many handling operations and exposure to heat, oils and chemicals. For example:

CASE No. 628: $58 a dozen neoprene gauntlets lasted 5 shifts washing appliance parts in kerosene-base solution. Less expensive *job-fitted* Edmont Grappler gauntlets wore 10 shifts . . . reduced glove costs 86%.

CASE No. 661: Unlined neoprene glove averaged 12 shifts handling plating racks in sulfuric and fluoboric acids. Edmont's *job-fitted* Neox glove (reinforced neoprene coated) wore 32 shifts. Glove costs dropped 75%.

CASE NO. 568: Handling 100 pound bags of chemicals, goatskin gloves wore 10 shifts. *Job-fitted* Grab-it gloves, coated with non-slip rough-finish natural rubber, wore more than 20 shifts and also gave far safer grip.

FREE TEST OFFER TO LISTED FIRMS: Tell us your operation, materials handled, temperature condition. We will send samples of the correct glove for on-the-job testing. Write Edmont Inc., 1205 Walnut Street, Coshocton, Ohio. In Canada, write Edmont Canada Ltd., Cowansville, Quebec.

Edmont
JOB-FITTED GLOVES

Waipahu, Oahu, Hawaii.

Refineries – The Amalgamated Sugar Co., Lewiston, Utah.

GLASS AND CERAMICS

FLAT GLASS DIVISION

Pittsburgh Plate Glass Co., Works I, Creighton, Pa.

GLASS PRODUCTS DIVISION

Group A – Owens-Illinois, Gas City Plant, Gas City, Ind.

Group B – Ball Brothers Co., Inc., Okmulgee, Okla.

FIBER GLASS DIVISION

Weston Mill, Canadian Gypsum Co., Ltd.

REFRACTORIES & POTTERIES DIVISION

Group A – American-Standard, San Pablo Plant, San Pablo, Calif.

Group B – Ferro Corp., Frit Plant, Nashville, Tenn.

MACHINE & MOLD SHOPS DIVISION

Owens-Illinois, Alton Central Shops.

HOSPITAL

Jointly sponsored by the American Hospital Association and the National Safety Council.

GRAND AWARD WINNER

Veterans Administration Hospital, Northport, Long Island, N.Y.

OTHER AWARDS

Group I – Wabash General Hospital District, Mt. Carmel, Ill.

Group II – South Florida Baptist Hospital.

Group III – Suburban Community Hospital.

Group IV – USPHS Alaska Native Hospital, Mt. Edgecumbe, Alaska.

Group V – Veterans Administration Hospital, Rutland Heights, Mass.

Group VI – Veterans Administration Hospital, Durham, N.C.

Group VII – Veterans Administrative Hospital, Sepulveda, Calif.

Group VIII – Tripler U.S. Army Hospital, Honolulu, Hawaii.

MARINE

SHIPBUILDING AND REPAIR DIVISION – PRIVATE

Heavy Yards – Dravo Corp., Engineering Works Div., Neville Island Plant.

Light Yards – U.S. Steel Corp., Marine Ways.

SHIPBUILDING AND REPAIR DIVISION – GOVERNMENT

Group A – Mare Island Naval Shipyard.

Group B – U.S. Army Engineer Div., Ohio River.

Harbor Equipment – The Chesapeake & Ohio Railway Co., Newport News – Norfolk Terminal Div., Newport News, Va.

STEVEDORING DIVISION – BULK CARGO

The Pittsburgh & Conneaut Dock Co., Stevedoring, Conneaut, Ohio.

STEVEDORING DIVISION – GENERAL CARGO

Kauai Consolidated Terminals, Ltd.

CARGO AND PASSENGER VESSELS DIVISION – PRIVATE

Ocean and Coastwise – United States Lines Co., New York, N.Y.

Inland Waterways – Bradley Transportation Line, Michigan Limestone, Division of U.S. Steel Corp.

TANKERS DIVISION

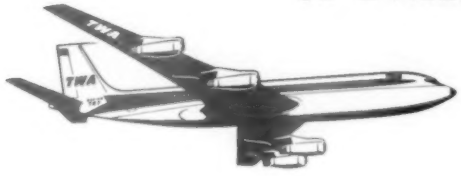
Ocean and Coastwise – Socony Mobil Oil Company, Inc., West Coast Div., Marine Transportation Dept.

Inland Waterways – Socony Mobil Oil Company, Inc., Marine Transpor-

– To page 74

• Larger than three football fields, Trans World Airlines' new multimillion-dollar jet maintenance hangar at Los Angeles International Airport was designed by Holmes & Narver, Inc., of Los Angeles, working with TWA's Facility Design, under direction of E. T. Phillips. Diversified Builders were General Contractors. COLOR DYNAMICS was used by Murray Painting Co.

How Pittsburgh COLOR DYNAMICS® adds to efficiency of TWA's giant new maintenance hangar



- **Relieves eyestrain and nervous tension**
- **Improves morale of workers**
- **Reduces accident hazards**
- **Costs no more than ordinary painting**

• **Increased efficiency, better morale, greater safety!** These are the principal benefits TWA gained through the use of Pittsburgh COLOR DYNAMICS . . . benefits *you* can count on, too!

• **Based on human reactions to the energy in color,** this modern painting system makes it possible to *scientifically* select colors that contribute to greater productivity.

• **Cool colors of high reflectance** make work areas bright and cheerful, help workers see their tasks better. Focal and eye-rest colors on machinery lessen eyestrain and nervous tension. Safety colors on machinery controls and material-handling equipment help reduce dangers of time-loss accidents.

• **Why not ask us** how you can enjoy the advantages of COLOR DYNAMICS—at no greater cost than ordinary maintenance painting?

• **Send coupon for free copy of booklet** which explains what COLOR DYNAMICS is and how it can be applied. If you wish, we'll also gladly prepare a detailed color plan of your factory without cost or obligation.

PITTSBURGH® PAINTS

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

Pittsburgh Plate Glass Co., Paint Div.,
Department NSN-51, Pittsburgh 22, Pa.

☐ Please send me a FREE copy of your booklet "COLOR DYNAMICS."

☐ Please have your representative call for a COLOR DYNAMICS survey without obligation on our part.

Name_____

Street_____

City_____ County_____ State_____

OFF THE JOB

Planning safety programs for your plant and community

By PAUL E. SHEPPARD
Director, OTJ Safety Activities
National Safety Council

Preliminary Report on OTJ Cost Survey

In a survey made in March 1961, companies reporting they had off-the-job safety programs were asked to give cost information to NSC. A preliminary study of 33 different company operations and two military installations produced interesting cost figures. This is a preliminary cost analysis. More detail will appear later.

In the 33 reports covering plant operations, 189,987 employees were reported, and 673 on-the-job injuries were reported, with 50,659 days charged for the disabling injuries. These 33 companies reported 4387 off-the-job injuries with about 99,965 days lost consequently.

The total reported cost was about $1,743,635. This resulted in an average cost per injury of $397.45. The average cost per day lost was $17.44, and the average cost per employee for these injuries in 1960 was $9.18.

Two military installations, covering 9,200 employees, reported 81 off-the-job injuries with 2,376 days lost. The total cost of these mishaps was reported $296,987. This raised the average cost for the 33 companies and two military installations to $456.71 per injury, $199.39 average cost per day lost and $10.24 average cost per employee.

Five of the 33 companies reported using the daily average wage times days lost to determine their cost. Sixteen firms reported using information based on insurance costs or insurance claims. The remainder had been able to determine their direct loss from company payroll records.

A preliminary survey review of companies not having an off-the-job program revealed 58 per cent of the companies reporting could not obtain injury reports. And 42 per cent marked lack of time as a reason for not having a program. About 33 per cent indicated they did not feel an off-the-job program was necessary. (This total exceeds 100 per cent because most of the reporters marked three or more categories for not having a program.)

Of particular interest was the fact that 13 per cent of the respondents said they plan to start an off-the-job program, and most of them stated they would do so in 1961.

Off the Job Disabling Injuries and Fatalities

Final analysis shows 1,439,125 employees covered in off-the-job injury reports submitted to the National Safety Council for 1960.

Reporting firms indicated a total of 859,273 days lost, with 399 fatalities.

The frequency rate of 8.47 is almost identical with the frequency rate of 8.6 derived from similar sources for 1959, according to these reports.

The chart here shows a breakdown of off-the-job injuries and fatalities by area and annual quarter.

Area	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter		Annual Reports		1960 Total	
	DISABLING	FATAL	DISABLING	FATAL	DISABLING	FATAL	DISABLING	FATAL	DISABLING	FATAL	DISABLING	FATAL
Transportation	2935	43	3485	68	2691	52	2609	44	1397	43	13117	250
Home	4008	5	5665	54	4649	12	3534	8	1802	11	19658	90
Public	2897	2	2883	15	3175	16	2124	9	1062	10	12141	52
Unknown	18	–	281	7	–	–	–	–	–	–	299	7
TOTAL	9858	50	12314	144	10515	80	8267	61	4261	64	45215	399
Days Lost	164,549		231,439		191,728		155,666		115,891		859,273	
Av. No. of Emp.	1,262,781		1,773,586		1,567,146		1,152,986		180,202		1,439,125	
OTJ Frequency Rate	8.38		7.54		7.22		9.81		9.14		8.47	
No. of Reporters	152		147		125		137		15		–	

Get lasting protection from weeds and grasses this easy low-cost way

with UREABOR® 31

YOU CAN WEED-PROOF 10,000 SQUARE FEET IN TEN MINUTES...

...it's the easiest way to kill weeds and grasses

A SPECIAL SPREADER simplifies and speeds the UREABOR 31 applications at low rates with accuracy. Spreader holds enough UREABOR 31 to treat 1250 sq. ft. without refilling; weighs a mere 6 lbs. Width of the swath can be adjusted.

STANDARD PACKAGE IS 50 LBS. UREABOR 31 is packed in multiwall paper sacks for easy handling—easy storing. A convenient package, easily disposable, for spotting at predetermined intervals to facilitate large-area applications.

UREABOR 31 IS 3 HERBICIDES IN 1 The plant-destroying powers of 3 proven herbicides are combined in this granular mixture of sodium borates, substituted urea, and trichlorobenzoic acid to yield fast, long-lasting, nonselective results.

UREABOR 31 is a special weed killer for industrial grounds. It lowers maintenance costs... protects property... and improves appearance. UREABOR 31 is effective on a greater variety of weeds and grasses than any other herbicide now on the market. A single dry application gives year-long control! Yet it takes only 1 to 2-lbs. per 100 sq. ft. to do the job! As a granular material, UREABOR 31 is always ready to use... and safe to handle. It's a big time saver too... any man can easily weed-proof ground at the rate of 1,000 square feet per minute.

Write for literature now!

U.S. BORAX

630 SHATTO PLACE, LOS ANGELES 5, CALIFORNIA

CIRCLE 22 ON READER CARD

From Cutlasses To Compensation

Workmen's Compensation now looks back on 50 years of effective championing of safety and the individual worker's worth

THIS MONTH marks the 50th anniversary of enactment of the first state workmen's compensation law in the United States. The Wisconsin Legislature passed this bill on May 3, 1911.

Perhaps the initial workmen's compensation system like our modern one was the schedule of payments to disabled "workers" among 17th Century pirates.

When the booty taken in a fray was adequate, 600 pieces of eight and six slaves were paid for loss of a right arm; 500 pieces of eight and four slaves for the loss of a left arm or right leg; 400 pieces of eight and four slaves for loss of a left leg; and 100 pieces of eight and one slave for loss of an eye.

That these compensations were made according to today's rule of thumb – on the theory of earnings loss – is illustrated by the fact that no payment was made for loss of a hand. The hook that replaced the hand actually enhanced the buccaneer's capacity to earn.

Since the days of piracy on the high seas, on-the-job hazards have become less dramatic through the efforts of safety. Following the industrial revolutions in Europe and America, public sentiment and humanitarian feeling prompted action to justly compensate workers who, in spite of safety's efforts, were injured doing their jobs.

Although such compensation is today accepted as an American institution, the road that led to it has been a long one.

Germany, under the leadership of Kaiser Wilhelm, enacted the world's first legal system of workmen's compensation in 1884. England, France and other European countries followed in the wake of their own industrial revolutions with similar legislation.

The U.S., however, was at the turn of the century still chafing under inadequacies of common law principles established by European guild workers in the 13th Century.

Common law called for employers to provide *safe* tools, enforce *adequate* safety rules, provide a *safe and suitable work place*, use *reasonable* care in selecting fellow employees, and maintain *proper* supervision and instruction.

In addition to these ambiguous "requirements," the employer had the advantage of four common law defenses which stipulated an injured employee could not recover damages if he contributed to his own injury, if a fellow employee's negligence caused his injury, if the injury occurred through no fault of the employer, or if the hazard which produced the injury was known to the employee.

Litigations involving these defenses were numerous, and often more money was spent in suit than was awarded by the court.

During the first decade of the 20th Century, employees and employers alike registered dissatisfaction with this system of settling the problem of compensation to injured workers. But fear that legislation would violate the 14th Amendment– by depriving the employer of property "without due process of law" – kept proposed laws from being enacted until 1911.

In that year Wisconsin's legislature passed a bill which was to be the first such law held constitutional. Since it was elective, allowing the employer to accept the law and come under it or reject it and remain under common law, it sidestepped the issue posed by the 14th Amendment.

Gradually the common law defenses were ruled inadmissible. Enlightened employers recognized the improvement of justice provided by the law, and realized the investment they had in their workers. This equation of the worker's welfare with the costs of operating a business became more common.

Within a few years of the enactment of the Wisconsin law, industrial accidents in that state were noticeably reduced.

In 1912 a National Council for Industrial Safety was formed to combat conditions and practices that caused accidents. This later became the National Safety Council.

Rapidly following these dawnings of today's system of assuring and insuring the safety of the worker, the U.S. began catching up with its industrial revolution.

In 1915 the first clinic devoted to occupational diseases was established in New York City.

Several United States Supreme Court decisions affirmed the validity of the pioneer Wisconsin legislation.

In 1916 a traveling railway ex-

– To page 86

(Illustration courtesy Employers Mutuals of Wausau)

found...a practical place for a first aid kit

visor at your fingertips

first aid kit

NOT in the glove compartment...

NOT under luggage...NOT under the car seat

BUT WHERE YOU SEE IT... WHEN YOU NEED IT...

To make first aid materials immediately accessible to drivers in case of emergency, equip your company's truck and car fleets with this new, highly practical No. 730 MSco visor first aid kit. Ideal, too, for special employee awards in your safety contests. Can be imprinted with your company name or other special insignia if desired. Ask your MSco distributor, or write for details.

CONTENTS
For Complete First Aid:

- Assorted bandages
- Curad adhesive compress with Telfa
- Antiseptic swabs
- First aid for burns
- Triangular bandage
- Adhesive tape

(Special fills also available)

ADJUSTABLE

Fits all car and truck windshield visors

PAT. PEND.

exclusive with MSCO

Specialists in first aid

Medical Supply Company

DEPT. AB1, ROCKFORD, ILLINOIS

CIRCLE 23 ON READER CARD

What Makes a Boss Tick?

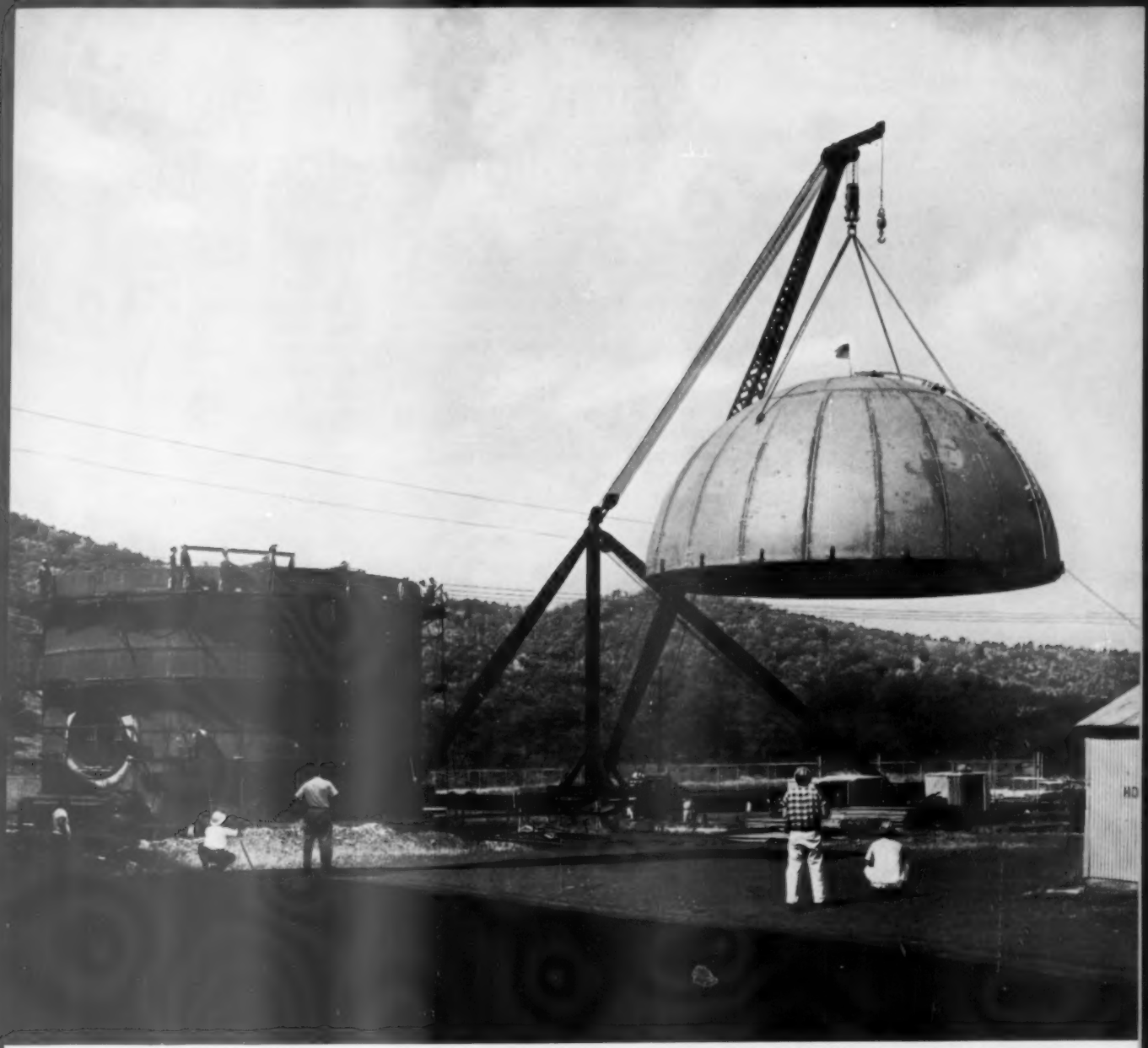
Time and again, men who rate poorly in personality tests turn out to be good managers, and vice versa. We have to take men as they are, with the traits they have, and try to bring about their development from that basis.

There just isn't any standard pattern of personality traits that make a good manager. We have some good managers who are tough and rugged, others who are quiet and thoughtful, others aggressive-salesmen types.

A man's development is 90 per cent experience in day-to-day work.

One big company discovered that many of its best executives came from small, isolated plants. The development of these men had been greatly stimulated by the opportunity, indeed, the necessity, for making decisions as they arose.

Of 143 men on a "promising young men" list 10 years ago, fewer than 4 out of 10 achieved the success predicted for them.



Prime Contractor: Westinghouse Electric Corporation;
Architect-Engineer: Gilbert Associates, Inc.

Bethlehem wire rope slings handle 27-ton steel dome for containment vessel

This hemispherical dish, made of 11/32 in. steel plate, is the dome of the containment vessel for a reactor constructed for Saxton Nuclear Experimental Corporation, a non-profit subsidiary of the General Public Utilities system. To support the dome while it was being positioned, they used four 1 in. by 60-ft Bethlehem wire rope slings. Each sling is made of Purple Strand rope—a wise choice for heavy lifting assignments because it's strong and tough, yet mighty easy to handle.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA. *Export Sales:* Bethlehem Steel Export Corporation

There's a distributor of Bethlehem Rope near you, supplied by our nationwide network of wire rope mill depots.

Steel
for Strength
... Economy
... Versatility

BETHLEHEM STEEL

BETHLEHEM STEEL

Alarm Systems Based On Building Block Idea

A modular, or building block, approach to fire alarm systems has been introduced by Faraday, Inc., Adrian, Mich.

The new concept in manufacturing fire alarm systems, the firm says, results in reduced installation and maintenance costs, compact size, increased signal alarm capacity, and easier trouble shooting.

Alarm stations are available in three types. Shown is the single-action pull lever type. "Alert-O-Glass" is said to draw attention.

The firm produces and stocks 17 modes, or units, from which are made five basic systems. Auxiliary units can be added to any of these basic systems to increase the numbers of alarm stations or signal devices.

Three of the systems are termed "compact," and have been designed primarily for installation in office buildings, small warehouses, and small industrial plants where complex systems are not needed. These systems are available on an off-the-shelf basis from electrical distributors.

Available in these simpler systems are non-code, closed-circuit supervised systems; plain code supervised systems; and shunt, non-interfering, coded, supervised systems.

For larger industrial applications there are several non-code, common code, and coded supervised systems.

The systems are actuated by manual alarm stations or one of several types of thermostats, or both.

All systems are supervised. Grounds or open signal circuits will sound a trouble bell on the control panel or at a remote installation.

The four-wire shunt system provides a certain amount of noninterference when two or more alarms are operated simultaneously. The station nearest the control panel will transmit signals without interference from stations electrically farther from the panel.

The manual alarm stations are designed to mount flush, and have "Alert-O-Glass" plaques reading "Local Fire Alarm." Signal boxes are available in single-action pull lever types, or double-action (open door and/or break glass, pull lever) types.

Since the modes which comprise all systems are stock, drawings and schematics are standardized, and individual system requirements are determined with relative ease. Control panels are factory assembled from stock modules, but panels can be interwired to meet varying system requirements.

The systems operate on 120/240 volt, 60 cycle, three-wire power supplies.

All components of the modular systems have been tested and listed by Underwriters' Laboratories.

Modular components, stocked by the factory, can be used to build simple single-circuit, non-code systems like that below left or complex alarm systems for larger industrial applications such as the coded, supervised, closed-circuit, system illustrated below right.

IN EVERY DEPARTMENT OF YOUR PLANT, WHEREVER HANDS GET DIRTY-

go-jo CREME HAND CLEANER

WORKS AT PEAK EFFICIENCY

ON THE LINE

Go-Jo cleans well on the spot without water. Go-Jo Dispensers placed throughout production areas let employees wash frequently without time loss of costly trips to the washroom.

IN THE PAINT SHOP

Go-Jo easily removes paint from the hands, eliminating the danger of dermatitis and fire caused by cleaning with turpentine and thinners. And, of course, Go-Jo is non-combustible!

IN THE OFFICE

Go-Jo removes mimeograph inks and duplicating fluids effortlessly. Secretaries appreciate Go-Jo's pleasant fragrance, and its gentle emollient action keeps feminine hands soft.

IN THE WASHROOM

Go-Jo Creme Hand Cleaner meets the full range of industrial soils, removing even deeply imbedded grease and grime. It contains GT-7, an antiseptic for protection against dermatitis, and emollients to prevent dry, chapped hands. Go-Jo's economical Heavy Duty Dispenser can save you as much as 75% of your handcleaning costs.

IN THE PRINT SHOP

Go-Jo gets rid of hard-to-remove inks. In addition, printers use it to clean their equipment, and have found it excellent for plates and rollers.

IN THE MAINTENANCE DEPT.

The maintenance man probably comes in contact with a greater variety of soils than anyone else. Go-Jo, "the maintenance man's friend," cleans them all!

FOR FURTHER INFORMATION ABOUT THE "STOP WASTE PROGRAM" AND THE NAME OF YOUR NEAREST JOBBER WRITE:

Pat. No. RE. 24312

GOJER, INC. Box 991, Dept. Akron 9, Ohio
MANUFACTURER OF go-jo PRODUCTS

2638

CIRCLE 25 ON READER CARD

NATIONAL SAFETY COUNCIL AUDITOR'S REPORT, 1960

To the Board of Directors,
National Safety Council:

We have examined the balance sheet of NATIONAL SAFETY COUNCIL (a Federal corporation organized not for profit) as of December 31, 1960, and the related statements of income and expenses and source and application of funds for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. We had made a similar examination for the year ended December 31, 1959.

In our opinion, the accompanying balance sheet and statements of income and expenses and source and application of funds present fairly the financial position of National Safety Council as of December 31, 1960, and the results of its operations for the year then ended, and were prepared in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

ARTHUR ANDERSEN & Co.

Chicago, Illinois,
March 17, 1961.

BALANCE SHEETS — DECEMBER 31, 1960 AND 1959

ASSETS

	1960	1959
CURRENT ASSETS:		
Cash (including $126,363 in 1960 and $118,200 in 1959, held by Trustees)	$ 574,626	$ 352,378
U. S. Government securities, at cost (market value $875,030)	$ 843,291	$ 843,172
Accounts receivable, less allowance for doubtful accounts of $10,773 in both years	$ 570,566	$ 621,178
Inventories, at approximate cost which is not in excess of market—		
Publications and merchandise	$ 664,527	$ 702,222
Paper stock, printing and shipping supplies, etc.	74,872	76,188
	$ 739,399	$ 778,410
Deposits and prepaid expenses	$ 85,943	$ 83,644
Total current assets	$2,813,825	$2,678,782
FIXED ASSETS, at cost:		

	Gross	Reserves		
Leasehold improvements	$594,385	$270,819	$ 323,566	$ 359,694
Furniture and fixtures	316,484	207,441	109,043	104,088
Printing machinery and equipment	51,374	32,486	18,888	20,466
	$962,243	$510,746	$ 451,497	$ 484,248
			$3,265,322	$3,163,030

LIABILITIES

	1960	1959
CURRENT LIABILITIES:		
Accounts payable	$ 179,027	$ 160,447
Accrued expenses and other liabilities	113,590	90,736
Deferred income — unfulfilled membership and service contracts, etc.	1,335,597	1,301,938
Total current liabilities	$1,628,214	$1,553,121
CONTRIBUTIONS FOR SPECIAL PROGRAMS	$ 109,603	$ 106,900
RESERVE FOR CONTINGENCIES	$ 300,000	$ 300,000
NET ASSETS EMPLOYED FOR THE BENEFIT OF MEMBERS:		
Balance at beginning of year	$1,203,009	$1,190,171
Income over expenses	6,320	12,838
Refund of Federal excise tax and interest applicable to prior years	18,176	—
Balance at end of year	$1,227,505	$1,203,009
	$3,265,322	$3,163,030

NOTE: Under a retirement plan adopted by the Council on July 1, 1959, there was an unfunded past-service liability of approximately $910,000 as of December 31, 1960. The Council intends to fund this amount over a period of approximately thirty years. For the year ended December 31, 1960, the Council provided $216,000 for pension costs of which $48,000 represented past-service cost.

STATEMENT OF INCOME AND EXPENSES For The Years Ended December 31, 1960 and 1959

	1960	1959
INCOME:		
Dues, publications and services	$4,745,517	$4,311,886
Contributions	913,510	856,742
Other Income	91,538	121,515
	$5,750,565	$5,290,143
EXPENSES:		
Publications and materials	$2,297,864	$1,978,333
Program administration and research	1,220,704	1,061,141
Administrative and general office (including depreciation and amortization of $62,383 in 1960, and $58,550 in 1959)	976,444	975,108
Membership, advertising and services	683,937	661,075
Public information and education	163,700	183,318
Local council and chapter development	356,904	372,619
Contributive fund solicitation	44,692	45,711
	$5,744,245	$5,277,305
INCOME OVER EXPENSES	$ 6,320	$ 12,838

STATEMENT OF SOURCE AND APPLICATION OF FUNDS For the Year Ended December 31, 1960

SOURCE OF FUNDS:	
Excess of income over expenses	$ 6,320
Noncash charges against income (provision for depreciation and amortization)	62,383
Refund of Federal excise tax and interest applicable to prior years	18,176
Increase in contributions for special programs	2,703
Other	(169)
	$89,413
APPLICATION OF FUNDS:	
Net additions to fixed assets	29,463
INCREASE IN WORKING CAPITAL	$59,950

every U. S. Safety product has

twin safeguards in *Quality!*

Safety Engineers on guard for the very finest in eye protection specify "U. S. Safety eyewear". SPECIALIZATION makes the difference . . . U. S. Safety craftsmanship assures maximum comfort, high lustre finish, and the "most wanted" styling adapted to safety eyewear's more rugged requirements.

What Twin Safeguards mean to you!

1 All U. S. Safety Eyewear is manufactured in our own plant to the American Standard Safety Code as approved by A. S. A. Only the finest American-Made ophthalmic materials are used in every product. These are your guarantees that money can not buy finer quality. Specify "U. S. Safety Eyewear".

2 U. S. Safety offers centuries of combined experience within its own 2½ acres of research, design, production, quality control, and sales facilities. Also, U. S. Safety features quality of service with its national network of sales offices and field service engineers that give you local service on a nationwide scale.

Consult the Yellow Pages under "Safety Equipment" for your nearby U. S. Safety factory trained Eye Safety Engineer.

U. S. SAFETY
PROTECTS THE EYES OF INDUSTRY

United States Safety Service Co.

OFFICES IN PRINCIPAL INDUSTRIAL CITIES
IN CANADA: PARMELEE, LTD. • IN ENGLAND: PARMELEE (G.B.) LTD • IN FRANCE: SAFI

CIRCLE 26 ON READER CARD

tation Dept., Inland Motor Vessel Fleet.

CARGO AND PASSENGER VESSELS DIVISION – GOVERNMENT

Class A – Commander Military Sea Transportation Service, Mid Pacific Sub Area.

PAPER

PULP AND PAPER MILLS DIVISION

Group A – P. H. Glatfelter Co., Spring Grove, Pa.

Group B – Price Brothers & Co., Ltd., Riverbend Mill.

Group C – Donahue Brothers Ltd., Clermont, Charlevoix, Quebec, Can.

Group D – Owens-Illinois, Big Island, Va.

Group E – Johns-Manville Corp., Asbestos Plant, Asbestos, Quebec, Canada.

PAPER BAGS GROUP, CONVERTING DIVISION

Union Bag-Camp Paper Corp., Richmond Plant.

BOXES AND CARTONS GROUP, CONVERTING DIVISION

Group A – Container Corp. of America, Philadelphia, Pa., Container Div.

Group B – Continental Can Co., Inc., Robert Gair Paper Products Group, Thames River Plant.

Group C – Container Corporation of America, Baltimore, Md.

ROOFING PAPER GROUP, CONVERTING DIVISION

United States Gypsum Co., South Gate Plant, Roofing Paper Div.

INSULATION AND BUILDING BOARD GROUP, CONVERTING DIVISION

Simpson Timber Co., Insulating Board Plant.

SPECIALTIES GROUP, CONVERTING DIVISION

St. Regis Paper Co., Panelyte Div., Kalamazoo, Mich.

PULPWOOD LOGGING DIVISION

Abitibi Power & Paper Co., Ltd., Sault Ste. Marie Div., Woods Dept.

PETROLEUM

MANUFACTURING DEPARTMENT – ALL OPERATIONS

Group A – Mobil Oil Co., Southern California Div.

Group B – Texaco Canada Ltd., Refining Dept.

MANUFACTURING DEPARTMENT – INDIVIDUAL PLANTS

Group A – Texaco, Inc., Refining Dept., Port Arthur Plant.

Group B – The Pure Oil Co., Smiths Bluff Refinery.

Group C – Texaco Inc., Refining Dept., West Tulsa Plant.

WHOLESALE MARKETING DEPARTMENT – ALL OPERATIONS

Group A – Continental Oil Co., Marketing Dept., Houston, Tex.

Group B – Lion Oil Co., A Division of Monsanto Chemical Co., El Dorado, Ark.

WHOLESALE MARKETING DEPARTMENT-REGIONS

Group A – Standard Oil Co., (Indiana), Kansas City Region, Kansas City, Mo.

Group B – Standard Oil Co., (Ohio), Marketing-Akron Wholesale Operations, Akron, Ohio.

DRILLING DEPARTMENT

Group A – Creole Petroleum Corp., Operaciones De Perforacion

Group B – Phillips Petroleum Co., Production Dept., Drilling Div.

PRODUCING DEPARTMENT

Group A – Pan American Petroleum Corp., Producing Operations.

Group B – Production and Exploration Dept., Lion Oil Co., A Division of Monsanto Chemical Co., Houston, Texas.

NATURAL GASOLINE DEPARTMENT

Group A – Phillips Petroleum Co., Natural Gasoline Dept., Western District.

Group B – Natural Gasoline Plants, The Ohio Oil Co.

OIL AND GAS PIPE LINE DEPARTMENT

Group A – Shell Pipe Line Corp., Houston, Tex.

Group B – Continental Pipe Line Co., Ponca City, Okla.

EXPLORATION DEPARTMENT

Sun Oil Co., Geophysical Department.

RESEARCH & DEVELOPMENT DEPARTMENT

Continental Oil Co., Ponca City,

The Finish is part of the Floor

Here's a beautiful and versatile floor. Properly maintained, it takes punishment in stride. But—far more hazardous than scuffing feet or tracked-in grime, are improper and inferior floor treatments. Instead of protecting the floor, such treatments may actually damage it!

Avoid costly mis-matching of floor and treatment. Follow the specifications of the Asphalt and Vinyl Asbestos Tile Institute*; choose the specialized treatments that fit the flooring. You'll hold "new floor" beauty much longer, and you'll be money ahead in maintenance.

*** SCRUB** "with a good, mild neutral cleaner ... no oils, organic solvents or other injurious materials." Hillyard Super Shine-All® is the famous neutral chemical cleaner with 6-fold cleansing action, formulated safe for all flooring. UL listed "as to slip resistance".

*** FINISH** "with an approved water emulsion wax ... containing no gasoline, naphtha, turpentine or mineral solvents ... Use no varnish, lacquer or shellac finishes." Hillyard Super Hil-Brite® is the finest of water emulsion, self-polishing waxes, made from 100% No. 1 imported Carnauba. Long-wearing—eliminates 2 re-waxings out of 3. UL listed "as to slip resistance".

*** SWEEP** "using recommended compound where necessary to keep down the dust ... no oil or solvent base compounds." Hillyard Super Hil-Sweep® dressing is formulated safe for resilient flooring, contains no oils, effectively controls dust. Non-slip, safe on the floor.

* "Maintenance of Vinyl Asbestos Tile and Asphalt Tile Floors," published by the Institute, N. Y. 17, N. Y.

ON ASPHALT TILE • VINYL • RUBBER • TERRAZZO • WOOD • CONCRETE OR GYMNASIUM

Let the Hillyard "Maintaineer®" recommend treatments that meet manufacturer or association specs. He's

"On Your Staff, Not Your Payroll"

SINCE 1907

You'll *Finish* Ahead with HILLYARD

BRANCHES AND WAREHOUSES IN PRINCIPAL CITIES

San Jose, Calif. ST. JOSEPH, MISSOURI Passaic, N.J.

HILLYARD, St. Joseph, Mo. Dept.

☐ Please send treatment recommendations for asphalt and asbestos vinyl.
☐ Please have the Maintaineer get in touch with me. No obligation!

Name.....

Firm or Institution.....

Address.....

City..... State.....

CIRCLE 28 ON READER CARD

Okla.

MARKETING RETAIL DEPARTMENT

Standard Oil Co. (Ohio), Marketing Retail Sales Operations, Entire Department.

POST OFFICE

DIVISION I

Pittsburgh Postal Installation, Pittsburgh, Pa.

DIVISION II

U.S. Post Office, Richmond, Va.

DIVISION III

U.S. Post Office, Austin, Tex.

DIVISION IV

U.S. Post Office, Berkeley, Calif.

DIVISION V

Money Order Center, Bureau of Finance, Post Office Dept.

DIVISION VI

U.S. Post Office Dept., Ann Arbor, Mich.

DIVISION VII

Holyoke Post Office, Holyoke, Mass.

DIVISION VIII

U.S. Post Office, Redwood City, Calif.

DIVISION IX

U.S. Post Office, Bangor, Maine.

DIVISION X

U.S. Post Office, Paducah, Ky.

PRINTING AND PUBLISHING

Group A – The Standard Register Co., Pacific Div., Oakland & Glendale, Calif.

Group B – Westinghouse Electric Corp., Printing & Nameplate Dept., Trafford, Pa.

PUBLIC UTILITIES

COMBINATION GAS & ELECTRIC DIVISION

Group A – Baltimore Gas and Electric Co.

Group B – New Orleans Public Service Inc., Electric and Gas Systems.

Group C – Community Public Service.

Group D – Superior Water, Light and Power Co., Superior, Wis.

GAS DIVISION

Group A – Washington Gas Light Co.

Group B – Equitable Gas Co., Pittsburgh, Pa.

Group C – New York State Natural Gas Corp.

Group D – Gas Light Co. of Columbus.

ELECTRIC DIVISION

Group A – Potomac Electric Power Co., Washington, D.C.

Group B – Kentucky Utilities Co., Lexington, Ky.

Group C – Kansas Gas and Electric Co.

Group D – Electric Energy Inc., Joppa, Ill.

Group E – Carlton County Co-op Power Association.

WATERWORKS DIVISION

Group A – Metropolitan Utilities District, Water Dept.

Group B – Platte Valley Public Power & Irrigation District.

Group C – Richmond Water Works Corp.

COMMUNICATIONS

Group A – General Telephone System, New York Companies.

Group B – Consolidated Telephone Co., Florence, Ky.

RUBBER

DIVISION I

United States Rubber Co., Naugatuck Footwear Plant.

DIVISION II

Goodyear Tire & Rubber Co., South Africa.

DIVISION III

Goodyear Tire & Rubber Co., Plant 2 Tires-Akron.

DIVISION IV

United States Rubber Co., Chicago Plant.

DIVISION V

Armstrong Cork Co., Kankakee, Ill.

TEXTILE

Group I – United States Rubber Co., Scottsville Plant.

Group II – The Kendall Co., Pel-

ONLY FIBRE-METAL

Safety Hats and Caps offer so many COMBINATIONS of HEAD and FACE PROTECTION

All FIBRE-METAL Safety Hats and Caps have the new DUAL Suspension ... with both a "fixed" safety factor and an "adjustable" clearance from the shell. A *polyethylene* exclusive ... strong, pliable, comfortable, easy to clean.

QUICK-LOK is the only BEST way to convert face protection to *head and face protection!* Easy to use, rugged, convenient, fast, positive.

OVER 50 YEARS OF WELDING & SAFETY EXPERIENCE!

These FIBRE-METAL COMBINATIONS are just a few of the many more possible...shown and described in bulletins and in our general Catalog No. 26. Just ask for them...*from YOUR WELDING & SAFETY DISTRIBUTOR!*

The FIBRE-METAL Products Company | CHESTER PENNA.

In CANADA: Fibre-Metal (Canada) Limited, Toronto

CIRCLE 30 ON READER CARD

zer Upper Plant.

Group III – Firestone Textiles, Gastonia, N.C.

Group IV – The Chemstrand Corp., Nylon Plant, Pensacola, Fla.

TRANSIT

DIVISION I

New York City Transit Authority.

DIVISION II

New Orleans Public Service Inc., Transit System.

DIVISION III

City Utilities of Springfield, Mo.

WOOD PRODUCTS

LOGGING DIVISION

Group A – Ladysmith Div., Crown Zellerbach Canada Ltd.

Group B – Crown Zellerbach Corp., Clackamas Tree Farm, Molalla, Ore.

Group C – British Columbia Forest Products Ltd., Pitt Lake Logging Div.

SAWMILLS DIVISION

Group A – Rayonier B. C. Ltd., Marpole Sawmill Div.

Group B – Southern Plant, Division of Potlatch Forests Inc., Warren, Ark.

Group C – Norwood Lumber Co. Ltd., North Vancouver, B.C.

PLYWOOD AND VENEER DIVISION

Group A – British Columbia Forest Products Ltd., Victoria Plywood Div.

Group B – Simpson Timber Co., Capital Plywood Plant.

FURNITURE DIVISION

Kroehler Mfg. Co., Kankakee, Illinois Plant No. 3.

WOOD PRESERVING DIVISION

Group A – Koppers Company, Inc., Wood Preserving Div., Gainesville, Fla. Plant.

Group B – Koppers Company, Inc., Wood Preserving Div., Houston Plant.

COOPERAGE DIVISION

Brown-Forman Distillers Corp., Blue Grass Cooperage Co., Finishing Div.

RETAIL LUMBER YARDS DIVISION

Weyerhaeuser Co., Marketing.

BOX MANUFACTURING DIVISION

United States Plywood Corp., California Div., Shasta Operation, Shasta Box Factory.

WOODWORKING DIVISION

Group A – Western Electric Co., Inc., Queens Boro Shop.

Group B – Ralph L. Smith Lumber Co., Anderson Div., Anderson, Calif.

WOOD SHINGLES DIVISION

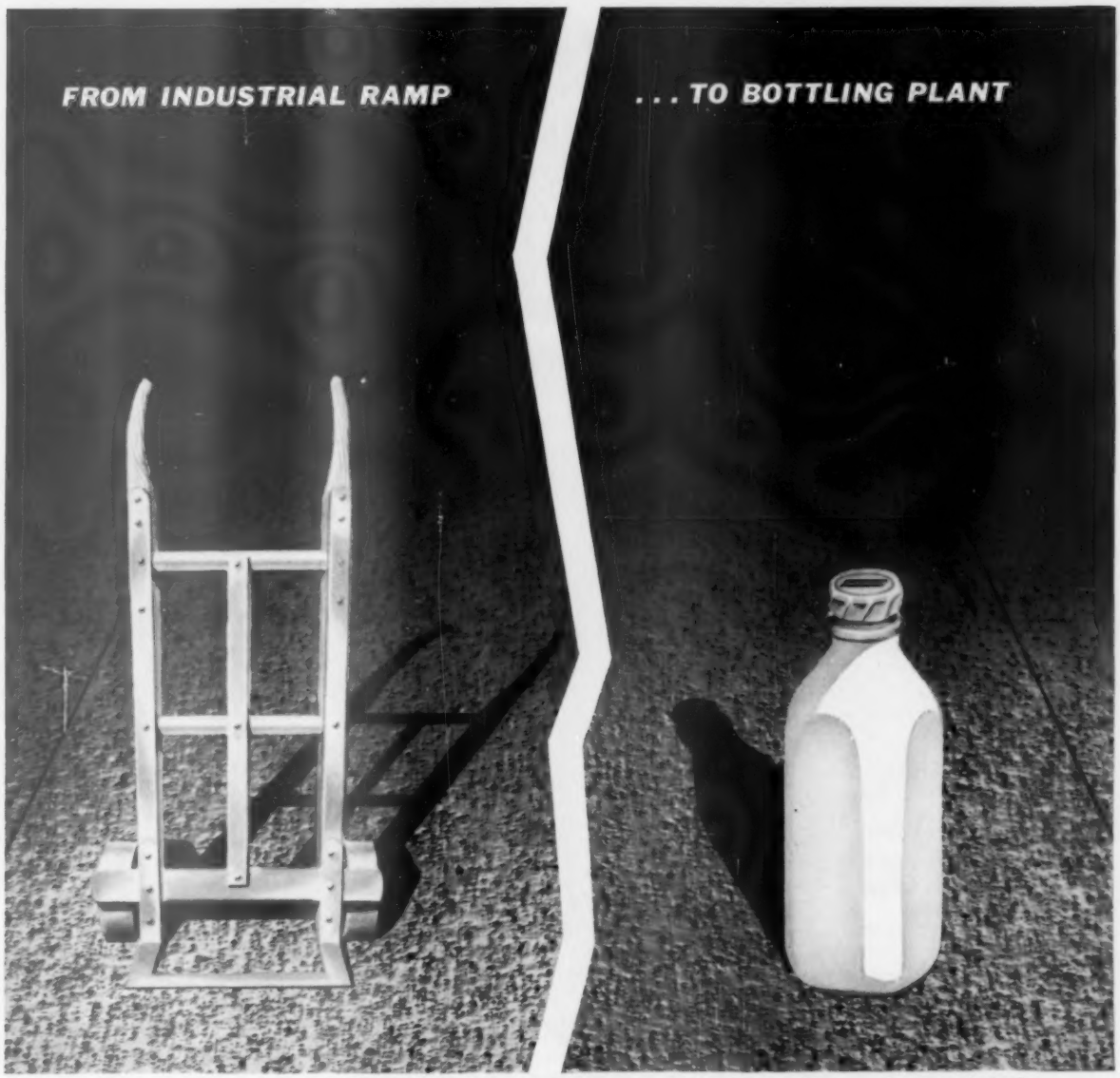
Canadian Collieries Resources Ltd., Flavelle Cedar Div.

FORESTRY DIVISION

Group A – Hercules Powder Co., Brunswick Woods Camp, Ga.

Group B – Rayonier Inc., Southeast Timber Div., Fernandina Beach, Fla.

"All I know is that his department has a perfect safety record for this year."



Abrasive particles are rolled densely and uniformly into high-quality steel and act as friction grips for safe footing.

There's never a slip on A.W. ALGRIP

(the only ABRASIVE rolled steel floor plate)

Step up your plant safety with Algrip—the world's only abrasive rolled steel floor plate. It provides safer footing where splashing water, grease, oil, ink mist or other slippery substances might otherwise pose serious plant hazards. Even on steeply inclined surfaces, Algrip creates firm traction for workmen's shoes and the wheels of rolling stock.

This high quality steel plate is light enough to use as flooring overlay and is strong enough for independent flooring. Fabrication is simple. You can shear, form, weld and drill it with standard shop equipment. Fire and chemical resistant, Algrip flooring is approved for safety by Underwriters' Laboratories. Write today for Bulletin AL-S1.

ALAN WOOD STEEL COMPANY

Conshohocken, Pa. • STEEL PRODUCERS WITH THE CUSTOMER IN MIND

DISTRICT OFFICES AND REPRESENTATIVES: Philadelphia • New York • Los Angeles • Boston • Atlanta Cincinnati • Cleveland • Detroit • Houston • Pittsburgh • Richmond • St. Paul • San Francisco • Seattle Montreal, Toronto and Vancouver, Canada: A. C. Leslie & Co., Ltd.

CIRCLE 32 ON READER CARD

SMALL BUSINESS and ASSOCIATIONS

By HUGH McCAHEY and JOHN T. CURRY

Small Business Program Staff, National Safety Council

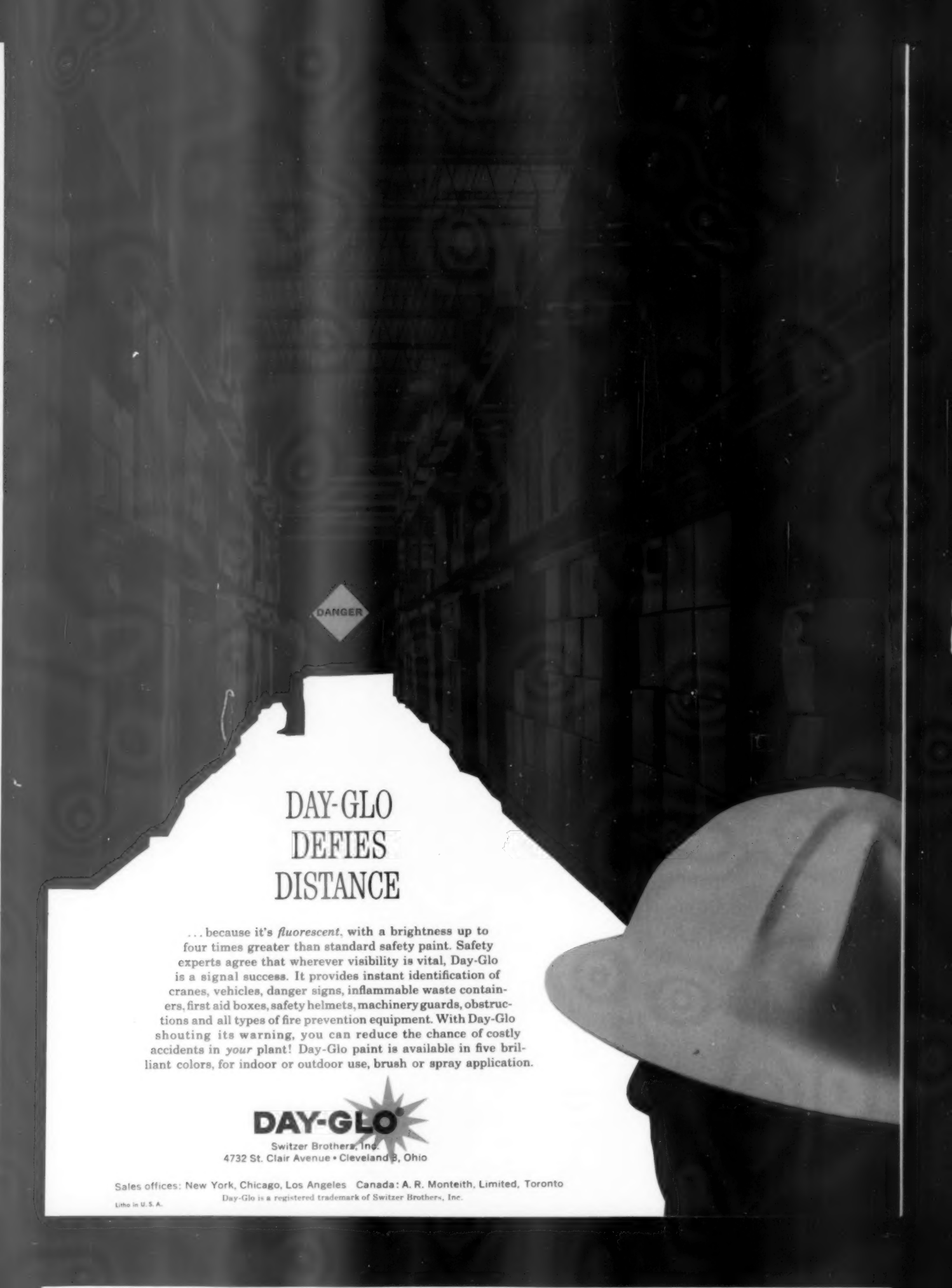
A. E. Brown, (left) vice president and regional director, United Papermakers and Paperworkers, AFL-CIO, and member of the NSC Board of Directors, presents the 1960 Associations Safety Award to G. M. Rhebeck, manager of the Northwest Timber Operations Department of Rayonier Incorporated and president of the Pacific Northwest Loggers Association. K. M. Murdock, secretary-manager of the Loggers Association, looks on.

Loggers Make Safety Pay

A. E. Brown, vice president and regional director, United Papermakers and Paperworkers, AFL-CIO, and a member of the NSC Board of Directors, recently presented the 1960 Associations Safety Award to the Pacific Northwest Loggers Association. His remarks at the presentation included a special challenge to management and a proof of the fact that safety pays:

"It is their responsibility to declare safety on the same plane as production and mean it. It is their responsibility to gain the support and cooperation of their supervisors in this hour by hour, day by day effort. It is the responsibility of the supervisor to make top management's declaration of intent known to the work force he directs, and to instruct the worker on safe ways to do the job. Once the confidence and cooperation of the workers has been gained, supervision will be easier and the results most gratifying. Successful salesmanship depends on one's ability to impress the buyer that a product is of real value or benefit. Once this is accomplished, a deal is made.

"The worker is the key. Once he



DAY-GLO DEFIES DISTANCE

. . . because it's *fluorescent*, with a brightness up to four times greater than standard safety paint. Safety experts agree that wherever visibility is vital, Day-Glo is a signal success. It provides instant identification of cranes, vehicles, danger signs, inflammable waste containers, first aid boxes, safety helmets, machinery guards, obstructions and all types of fire prevention equipment. With Day-Glo shouting its warning, you can reduce the chance of costly accidents in *your* plant! Day-Glo paint is available in five brilliant colors, for indoor or outdoor use, brush or spray application.

DAY-GLO

Switzer Brothers, Inc.
4732 St. Clair Avenue • Cleveland 3, Ohio

Sales offices: New York, Chicago, Los Angeles Canada: A. R. Monteith, Limited, Toronto

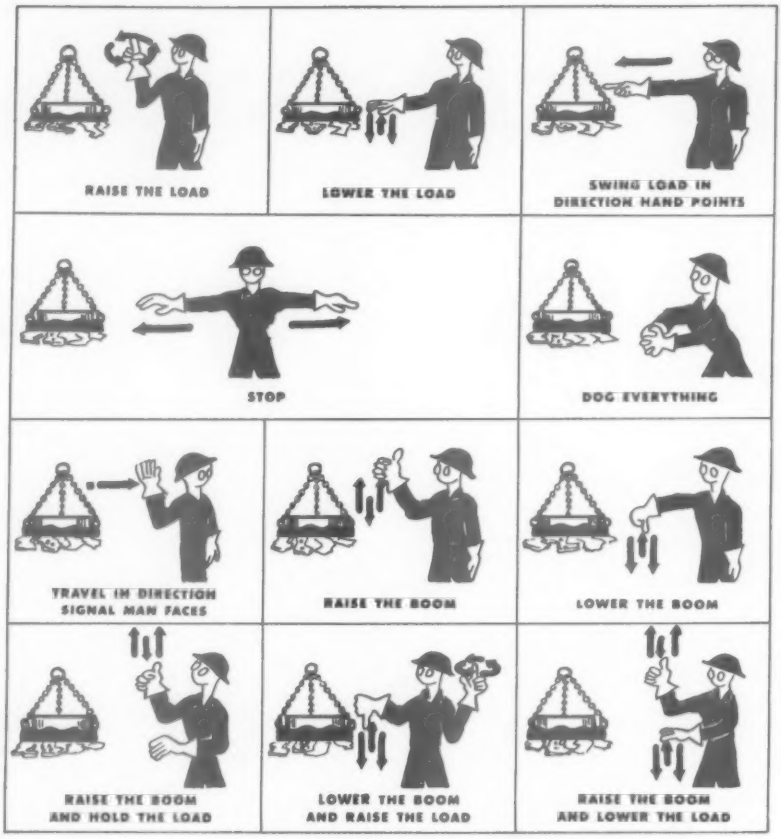
Day-Glo is a registered trademark of Switzer Brothers, Inc.

Litho in U. S. A.

buys, you're in. Education is his tool to becoming a safe worker. Most of you are interested in profit. Today, with taxes what they are and with costs steadily climbing and with new products being introduced in competition with the ones you produce, the picture becomes grim and you search for means to reduce production costs."

Mr. Brown also added:

"Accident prevention is one field in which you can improve your profit structure and at the same time do some good for your fellow man. For example, in the State of Washington the basic rate for industrial insurance was 30 cents per workman hour. Because of your efforts, the rate is 20 cents as of January 1, 1961. Each firm pays 40 per cent of the basic rate, plus 60 per cent of its own cost experience rate over the preceding five-year period. Pure and simple, this is a merit rating system, one which gives credit to those who do a good job. . . ."



Clip These Signals for Your Cranemen!

AN EXTRA MARGIN OF SAFETY... AT NO EXTRA COST!

CHEMIGUM OIL PROOF SOLES

TODAY'S BEST BUY IN SAFETY SOLING!

It's been proved by every technical test . . . it's been demonstrated in actual use—Chemigum *Oil Proof* Soles are easily today's greatest soling for safety shoes. And you get all this extra safety at the usual price of ordinary safety soles. So, why settle for less?

Chemigum will not absorb oil, will not swell or soften . . . its oil resistant qualities far surpass those of any other soling material used on safety shoes. You can depend on Chemigum to keep shoes in shape, too.

In addition, Chemigum *Oil Proof* Soles have an "engineered tread" . . . for sure-grip, non-slip walking, even on floors cluttered with steel chips and other factory debris. What's more, they are lighter in weight than other brands of soling material designed for most other safety shoes. And Chemigum *Oil Proof* Soles have these other outstanding features: Remarkable resistance to picking up steel shavings and chips . . . New handsome amber color . . . Non-Marking.

Many manufacturers of safety shoes are replacing old-style soling with these remarkably safer Chemigum soles. If you, too, are looking for extra safety at no extra cost, specify Chemigum *Oil Proof* Soles.

***CHEMIGUM Heels** are made of the same sensational oil proof material as Chemigum Soles.*

Mr. Neolite says:
"We're proud to bring you another pioneering product of GOODYEAR research."

LOTS OF GOOD THINGS COME FROM

GOODYEAR

NEOLITE AND CHEMIGUM, T.M.'S— THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO

CIRCLE 35 ON READER CARD

Voice of Reader

– From page 8

Liked Motivation Article

COLUMBUS, OHIO. The February issue of SAFETY NEWS certainly contained some fine items. The feature article on motivation was of particular interest.

I was also impressed with the description of the safety primer issued by the Paterson plant of Continental Can, and would appreciate your sending us a copy. May the future issues of the SAFETY NEWS be as informative as this one.

– EARL ISALY
Safety Director
Lennox Industries, Inc.

Did We Slip?

DETROIT, MICH. Please refer to the center column, page 69, March issue, NATIONAL SAFETY NEWS.

Should we publish a picture of a man operating a machine with long sleeves and no eye protection?

– G. E. HUMPHREY
General Chairman
A. T. M. Section
Cadillac Motor Car Division
General Motors Corporation

We spotted this picture as a collection of horrors before publishing it, and took note of them in the caption. The caption reads, "Even under adverse conditions, oil absorbents minimize hazards."

The operator has a rag in his pocket and the shop is generally crowded. The bins of completed parts just behind the operator are a potential tripping hazard in case of a short step backward.

Perhaps our caption was not strong enough. It was not our intention to illustrate safe conditions in this photograph, but the use of oil absorbents to make the best of a bad situation.

Runner Bar Grinding

DEARBORN, MICH. In the March, 1961 issue of your fine magazine, a picture appeared on page 110 showing a man grinding a "runner bar" for the glass industry.

This operation presents several safety problems to us in the operation of our glass plants. Would you provide us the name of the company which furnished the picture so that we might communicate with them?

– FRANK MANNING
Divisional Safety Engineer
Glass Division
Ford Motor Company

Design and Liability

HARTFORD, CONN. I found the article in the January issue of the NATIONAL SAFETY NEWS by Frederick Kirch, "Design It Right – Build Safety In" very interesting and feel that it would be of interest to other insurance engineers, particularly from the standpoint of Products Liability.

– CHARLES H. BARBONI
Supervising Engineer
Aetna Insurance Company

"Fire-Flex" . . . THE MODERN LIGHTWEIGHT HOSE THAT MAKES Fire Protection SO RELIABLE

MAKE THE *Right Choice* FROM ANY OF THESE SPECIAL "*Fire-Flex*" CONSTRUCTIONS

"EZflex"

Imagine—only 18 lbs. for 100 feet of fire hose! That's "EZflex." 300 LB. TEST, SINGLE JACKET; 400 LB. TEST, DOUBLE JACKET. Can also be furnished in special 600 LB. TEST, DOUBLE JACKET. 50, 75 and 100 FT. LENGTHS.

Jacket more highly resistant to abrasive wear than that of any other fire hose.

"SYN-FLEX"

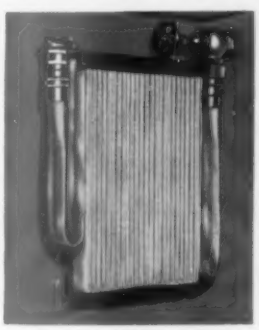
Neoprene Covered—fully protected from damage by rain and moisture—does away with costly hose boxes. Highly abrasion-resistant. Especially designed for the chemical, petroleum and allied industries. 300 LB. TEST. MAX. LENGTHS, 50 FT.

"LITE-FLEX"

Another lightweight "Fire-Flex" construction, with gray Synplastic® coated cover—resistant to oils, acids, moisture and severe abrasive wear. Very compact—maximum length fits regular racks and reels. 300 LB. TEST. 50, 75 and 100 FT. LENGTHS.

"DRI-RACK"

The non-weeping, compact *lined* hose that fits foot-for-foot on racks designed for unlined linen hose. You don't need new racks. 300 LB. TEST. 50, 75 and 100 FT. LENGTHS.



"RED-FLEX". The 400 LB. TEST Neoprene Covered Fire Hose. Has all the features of 300 lb. test "Syn-Flex". Neither UL nor FM has a specification for a 400 lb. test rubber or synthetic covered fire hose, but —you can get it in "RED-FLEX"!

Goodall Rubber Co. Date_____
449 Whitehead Rd., Trenton 4, N.J.
Send copy of your Fire Hose Catalog
Send prices on ☐ "EZflex" ☐ "Dri-Rack"
☐ "Syn-Flex" ☐ "Lite-Flex" ☐ "Red-Flex"
Company_____
Address_____
City_____ Zone____ State_____
Attention of_____

"If it's GOODALL, it MUST be Good!"

Mail Coupon, or Contact Our Nearest Branch

Manufacturers of Mechanical Rubber Products—Since 1870

Standard of Quality HOSE · BELTING · FOOTWEAR CLOTHING · EXPANSION JOINTS · PACKINGS · LINERS, ETC.

GOODALL *Rubber Company*

GENERAL OFFICES, MILLS and EXPORT DIVISION, TRENTON, N. J.
Branches and Distributors Throughout the United States and in Canada

CIRCLE 37 ON READER CARD

Compensation

— From page 66

hibit of safety devices was sent around the nation by the National Museum in Washington, D.C.

By 1920, all but six states had some form of workmen's compensation law. Today all states and territories are covered.

Injury and frequency rates dropped, often most strikingly in industries previously considered most dangerous. Modern American industry has assumed accident prevention responsibility to the point where only about 15 per cent of industrial accidents are caused by unsafe machinery. The rest are caused by what is characterized as "human failure." This is the reverse of previous roles.

Finally, there has been a shift of emphasis in dealing with workmen's compensation. Today's emphasis is: prevent the accident so the insurance does not have to be paid. Conceived as a way of obtaining fair treatment for workers injured under what were considered unimprovable conditions, workmen's compensation has become a safety tool.

J. C. Johnston

Joins Post Office Safety Program

JAMES C. JOHNSTON, former acting director of industrial safety and hygiene, Bureau of Naval Weapons, Department of the Navy, is now a member of the headquarters safety staff of the Post Office Department, Washington, D.C.

His major responsibilities now will be concerned with the department's motor vehicle safety program with special assignments in industrial safety and industrial hygiene.

DR. THEOS J. THOMPSON, professor of nuclear engineering at the Massachusetts Institute of Technology and director of the MIT reactor project, has been elected chairman of the Atomic Energy Commission's Advisory Committee on Reactor Safeguards for a one-year term.

He has been a member of the Advisory Committee since November 1959. He succeeds DR. LESLIE SILVERMAN, professor of engineering in environmental hygiene, School of Public Health, Harvard University.

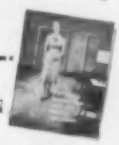
DR. ELDA E. ANDERSON of Oak Ridge National Laboratory has been named chairman of the American Board of Health Physics. The board was created last year by the Health Physics Society to establish uniform standards for radiation protection specialists.

To date the board has certified more than 150 applicants as the nation's first accredited experts in radiation protection. Approximately 500 candidates applied for certification during the group's first year.

Wax containing Du Pont anti-slip LUDOX® is safer for walking—and beautiful on floors, too!

Employees and visitors walk confidently, more safely on your floors when the wax contains Du Pont "Ludox" colloidal silica. Tiny silica particles of "Ludox" give a solid, sure grip underfoot. Yet you get the same lasting beauty, speedy application and ready rebuffability offered by other fine waxes.

"Ludox" is Du Pont's registered trademark for its colloidal silica—an ingredient used by formulators of quality wax. Floor wax containing "Ludox" is available everywhere. If you'll mail the coupon, we'll send a list of suppliers and more information.



E. I. du Pont de Nemours & Co. (Inc.)
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CIRCLE 39 ON READER CARD

PERSONALS

News of people
in safety
and related activities

J. S. Chapman

C. M. Allen

Dr. V. C. Baird

Chapman Succeeds Allen at Armco

JAMES S. CHAPMAN has been appointed manager of safety for Armco Steel Corp. He succeeds CAMPBELL M. ALLEN, chief safety engineer, retiring after 43 years service with the firm. Chapman joined Armco in 1937 after attending West Virginia Business College and Morris Harvey College. He first served as tipple foreman for the company's coal mines at Nellis, W.Va.

He is a member of the safety committee of the American Iron and Steel Institute, the American Society of Safety Engineers, and is on the program committee of the National Safety Council Metals Section. He is a charter member of the safety committee, American Mining Congress.

Allen, who had served as chief safety engineer since 1959, started with Armco as a laborer in the Annealing Department at the Middletown works. His knowledge of safety organization and programming was recognized by the steel industry and many safety societies in which he was active. He is a past chairman of the NSC Metals Section and member of its Executive Committee. He was recently honored by the ASSE with a life membership.

Dr. V. C. Baird Now Medical Director of Humble

DR. VALLIANT C. BAIRD has been named medical director of Humble Oil & Refining Co., principal operating affiliate of Standard Oil Company (N.J.). He has been chief physician of the company's Humble Division.

Currently serving as chairman of

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CIRCLE 41 ON READER CARD

the Council on Industrial Health of the Texas Medical Association, Dr. Baird also has served as chairman of the Medical Advisory Committee of the American Petroleum Institute.

He is a former president of the Texas Industrial Medical Association, a fellow and member of the Council on Occupational Health of the American Medical Association, and a fellow of the American College of Preventive Medicine.

D. H. Thompson Dies

DANIEL H. THOMPSON, assistant manager of the National Safety Council's Public Information Department from 1942 to 1956, died March 29 at his home in Lombard, Ill., after a long illness.

A native of Indiana, Mr. Thompson joined the *Louisville Times* after graduation from the University of Louisville in 1927 and became its magazine and drama editor. From 1936 to 1942, he was with the Central Division Publicity Department of the National Broadcasting Co. Joining the National Safety Council, he directed NSC's work with radio and television publicity.

D. H. Thompson

He was an honorary Kentucky colonel and a member of the Radio Pioneers of America, the National Association of Public Relations and Sigma Delta Chi, national journalistic fraternity.

Retired Railroad Safety Man Dies

LAWRENCE J. BENSON, who retired in 1953 as assistant to the president, Chicago, Milwaukee, St. Paul and Pacific Railroad, suffered a fatal heart attack at his home in Libertyville, Ill., on March 29, 1961.

He started as a call boy for the railroad in 1906, and was in charge of the railroad's safety, fire prevention, and police departments at the time of his retirement.

He was a member of the National Safety Council's Board of Directors, 1947-1948, served on the executive committee of the Council's Railroad Section, and was active in the work of the safety section of the Association of American Railroads.

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CIRCLE 43 ON READER CARD

New at...

Members listed below have designated the persons shown to handle relations between their organizations and the Council. The name of the person who formerly handled NSC matters for the organization is in italics.

Allied Chemical Corp., New York. E. J. Elliott. *G. D. Byrnes.*

Amerotron Co., Aberdeen, N.C. A.C. Latimer. *J. W. Langford Jr.*

Bemis Brothers Bag Co., St. Louis, Mo. R. H. Wahlfeld. *J. E. Voege.*

Bristol Steel and Iron Works, Bristol, Va. John H. Deakins. *Q. E. Charlesworth.*

Chicago & Northwestern Railroad System, Chicago. L. C. McDowell. *D. L. Perrin.*

Chromium Mining & Smelting, Chicago. F. W. Belz. *P. Varroni.*

Climax Uranium Co., Grand Junction, Colo. Paul Wire. *R. C. Toerper.*

Crown Zellerbach Corp., Portland, Ore. J. F. Robertson. *G. LaHusen.*

Decorated Metal Manufacturing Co., Milltown, N.J. W.A. French. *F. J. Leake.*

CIRCLE 45 ON READER CARD →

Donegal Steel Foundry Co., Marietta, Pa. S. B. Donner. *David D. Todd.*

The Donruss Co., Memphis, Tenn. J. A. Scheiman. *J. B. Rendall.*

Wilbur B. Driver Co., Newark, N.J. H.J. Tymecki. *T. A. Mulligan.*

Goliad Oil and Gas Co., Draytor Valley, Alberta, Canada. L. Southwell. *C. E. Holder.*

W. R. Grace and Co., Ft. Pierce, Fla. E. H. Sullivan. *A. C. Gordy.*

W. R. Grace and Co., Perry, Iowa. E. W. Haynes. *J. Bass*

S. J. Groves and Sons Co., Minneapolis, Minn. F. A. Vogelsberg. *P. F. Huntington.*

Honolulu Iron Works Co., Honolulu, Hawaii. A. Gerakas. *Alden I. Avery.*

Hooker Chemical Corp., Niagara Falls, N.Y. C.M. Olsen. *P. J. Carmody.*

Hunter Engineering Co., Riverside, Calif. Wm. J. Grey.

Interchemical Corp., Bound Brook, N. J. Henry Schuit. *H. A. Johnson.*

L Air Liquide, C. M. Morris. *J. M. R. Martin.*

Lavino Shipping Co., Philadelphia. Herbert Brodhag. *Samuel Clauss.*

Lee Brothers Foundry Co., Anniston, Ala. Lee Ledbetter. *H. O. Kelley.*

Luckenbach Steamship Company, Inc., Brooklyn, N.Y. J.D. Hutchinson. *R. J. Tarr.*

Matanuska Electric Assn., Palmer, Alaska. Ralph Moore. *Mason La Zelle.*

Mountrail Electric Co-operative, Inc., Stanley, N.D. E. Evenson. *H. Hanson.*

Packaging Corporation of America, Grand Rapids, Mich. J. E. Davis. *J. M. Wall.*

Public Utility District No. 1 of Cowlitz County, Longview, Wash. G. Christianson. *D. E. Bornstedt.*

Safway Steel Products, Milwaukee, Wis. A. T. Hoenke. *D. G. Smith.*

San Francisco Chemical Co., Montpelier, Idaho. J. A. Pendlebury. *F. L. Wilson.*

City of Sidney, Sidney, Neb. Phyllis Brumbaugh. *James Willis.*

Simpson Timber Co., Shelton, Wash. H. Curtis. *Carl D. Winge.*

Somerville Construction Co., Ada, Mich. J. C. Brackenborough. *R. B. Somerville.*

South Miami Coach Lines, South Miami, Fla. M. H. Wooten. *P. S. Cirois.*

Spector Freight System Inc., Chicago. Jack Dieter. *A. F. Mayerhofer.*

City Utilities of Springfield, Springfield, Mo. W. W. Dunn. *E. D. Jones.*

Stockton Unified School District, Stockton, Calif. C. F. Ross. *Edmund L. Lewis.*

Summer Fertilizer Co., Baltimore, Md. J. C. Baker. *R. E. Fraser.*

Standard Oil Company of California, Western Operations Inc., Honolulu, Hawaii. R. V. Bell. *P. G. Curnutte.*

Steere Tank Lines Inc., Albuquerque, N. Mex. W. K. Barton. *E. L. West.*

Strathmore Paper Co., West Springfield Mass. Wm. H. Jenkins. *J. Paul Sturtevant.*

Tension Envelope Corp., South Hackensack, N.J. A.H. McCaul. *R. House.*

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Diary of Safety Engineer

— From page 14

I do — walk the plant, spot the hazards, argue with foremen, kid the help, put up posters, check out accidents, teach classes simple things like eye protection. You and Lee both say I do most of these things well — maybe not as good as you two, but better than the average kid just out of engineering school would.

"Here's my point: Since most of the work is work a bright high school graduate can do, and since we've already got Lee and you to cover what is over an ordinary Joe's head, I say to hire another ordinary Joe. Pick a right guy the men like — a guy with some guts and some brains and some ambition.

"Put him through the same training you gave me. Then you got a good guy for the job who knows the Project, knows the people, and frees you and Lee to spend more time doing what you're trained to do."

Lee was less emphatic, less eloquent, in his counterargument. "Boss," he said, "There's a lot in what Bert says, and I'm the first to say I'm glad he's a member of our staff. He does more than just free the technically trained members of the safety staff of routine work. He does some things better than I do—and maybe you do, Boss. I even try to learn from him at the same time I try to teach him.

"It might be in the short run a bright man from the shop floor would be a better bet than a graduate engineer. But in the long run the advances in safety here on the Project and in industry depend on technical, scientific, and organizational development.

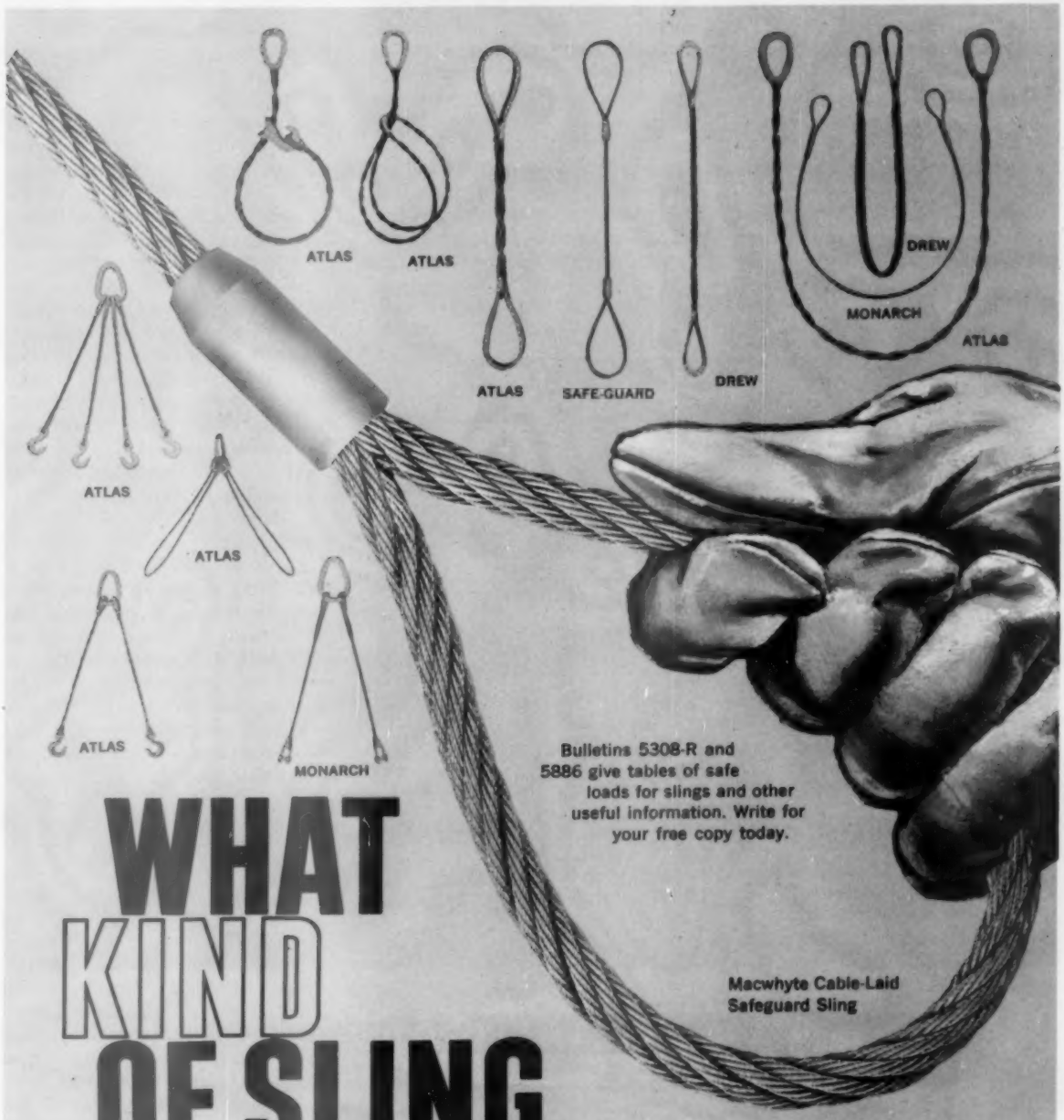
"We can't have excess in the way of engineering potential in a staff like ours. We need professional safety engineers—industry as a whole needs them. Occasionally a guy like Bert comes along who has great contributions to make, but the norm is the professionally trained man who can do the whole job."

Having raised the problem with Lee and Bert, I was now in diplomatic difficulty. How would I explain my decision in a way that wouldn't insult one or the other of them — since each gave an answer which unconsciously has taken the form of argument in behalf of his own superiority?

And I was hardly in a completely objective position either. I've done long battle for the upgrading of the safety engineering profession. I've proudly carried the title of engineer, and my framed diploma hangs over my desk. But this isn't a convention of the ASSE — this is the front-line of safety work. And the decisions are not theoretical. They are immediately and intensely practical.

What I said was approximately this: "You are both right, in part. I value the services of both of you — and you both have the limitations you know and have mentioned. You supplement each other very well.

"Whoever I hire is something of a gamble. I didn't know certainly, when I hired each of you, whether you would work out well. I've seen graduate engineers who were stupid, willful, stubborn, snobbish, lazy. I've also seen men promoted from the shop floor who let promotion turn



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CIRCLE 47 ON READER CARD

them into bullies and conceited boobs

"There's an element of gamble always. But what are the probabilities? If I can line up a good June graduate from an engineering school, I'd have a pretty accurate record of his areas of intelligence and knowledge.

"Astute faculty members and guidance workers will have been watching him, testing him, judging him for years. It's true that these witnesses are fallible and not all-knowing. But I think it is fair to say I will know more about such a man than I will about somebody one of you recommends from one of your shop safety committees.

"What Lee says about growth potential is important, too, Bert. You can grow, but you are one guy in a thousand. Lee can grow, but maybe he's only one of the top 10 per cent of professionally trained engineers in general ability. My odds of finding a man to grow up with the profession are a lot better in the college-trained group.

"Finally, something neither of you has mentioned. There is something to this work beside drawing-board and slide-rule engineering on the one hand and shop-floor human contacts on the other. That something is the difficult and complicated art of relationships with top management, corporately and as individuals.

"Bert, if I got sick next week and the department needed something jammed through the executive committee and the superintendent's office for approval in the face of serious high-level resistance, would you want to handle the matter or would you get Lee to do it for you?"

"I'd get Lee," he said. "I'd be scared blue."

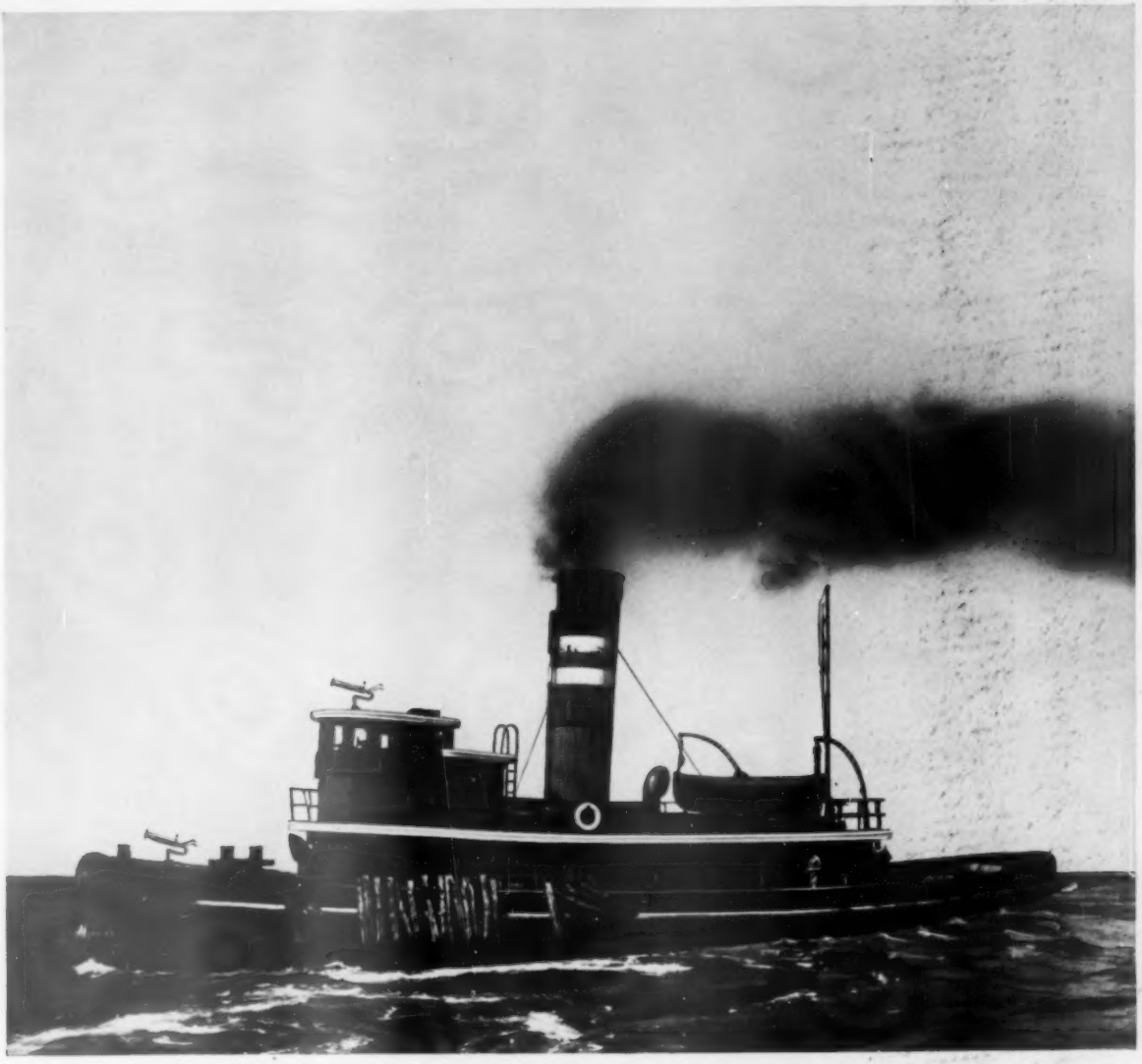
Lee broke in, "You might be a fool to do it, Bert. I wonder what it really does take. Certainly not just technical sophistication and an old-school tie. It must take character and force, and maybe you've got more of that than I have."

I said emphatically, "I'd send Lee. You can learn to handle the front office contacts, Bert, and maybe ultimately you'd be a better scrapper for safety in the front office than Lee. He still has a tendency to think Goddess Reason ought to rule the world.

"But even if that is true, it is still between the one-out-of-a-thousand guy and the one-out-of-ten guy. Lee speaks better English, dresses in better taste, has a broader knowledge from which to speak to questions – even irrelevant ones. These things give him a head start.

"This is important, not for the immediate present, but for the long run. As I look back on my career, I don't see too many monuments to my technical creativeness. But I can remember winning a good many front-office battles that made the difference between the existence of an adequately-backed safety program and the absence of such a program. And I'm absolutely sure these programs have saved lives, prevented injuries, and saved money.

"No, Bert, I'm not going to look for a double of you. I don't think I'd be so lucky again. I'll write to the dean at Tech and see what he has available."



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CIRCLE 49 ON READER CARD

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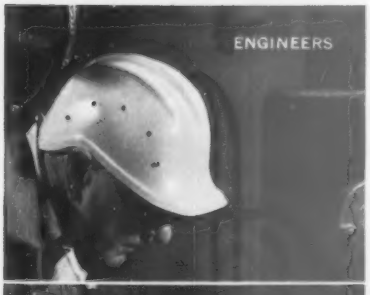

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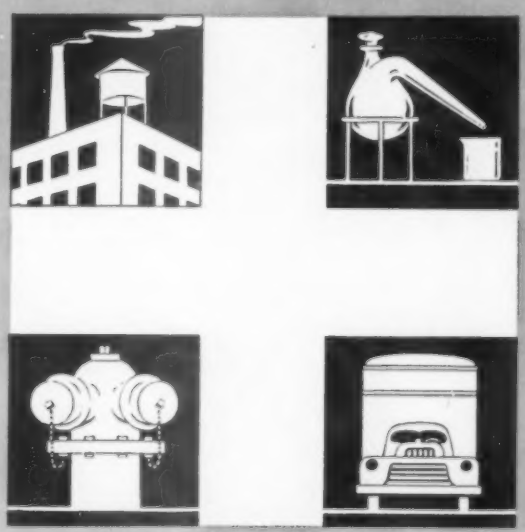
TECHNICAL FEATURE SECTION

The Journal

OF THE AMERICAN SOCIETY OF SAFETY ENGINEERS

IN THIS ISSUE



MAY, 1961

National Safety News, May, 1961

Unusual Articles Featured In this Issue of the Journal

■ AN UNUSUAL COMBINATION of articles are featured in this issue of the *Journal* which should appeal to the safety engineer. C. W. Rose and John A. Dickinson, in their paper "When Are Safety Belts Unsafe?" outline a simple but effective method for testing safety belts (page 18). Dr. J. N. Peterman, director of psychological research for a Chicago advertising agency, provides some new insights into the problem of management resistance to participation in safety programs in "Selling Safety to Management – Some Psychological Considerations" (page 22). John W. Gurry, in a brief but compelling article, "A Safety Job or Job Safety" (page 26) talks about selling safety and John W. Leggat, Jr., peers into the future in his discussion of electronic control of passenger cars in "The Electronic Driver – Is it Coming?" (page 27).

With this issue of the *Journal*, only one more remains under the present format. The August *Journal* will end another chapter of Society publication history after almost six full years of publication (23 quarterly issues) and in October, the Society's new magazine will make its initial appearance. Preparations for the new publication are speeding ahead and reports of progress will soon be issued to the Society membership.

The Society's Technical Paper Award program will continue under the new publication and papers are now being accepted for the 1961 competition which closes June 30, 1961. Entries are being reviewed and papers *published* or *accepted for publication* by June 30 will be eligible for this year's awards.

– the Editor

AMERICAN SOCIETY OF SAFETY ENGINEERS

Organized 1911 – Chartered 1915

5 North Wabash Avenue, Chicago 2, Ill.

A. C. BLACKMAN
managing director

LEONARD LEVINE
editor

This Journal section is the official technical publication of the American Society of Safety Engineers. It appears quarterly in the National Safety News as a service of the Society to the National Safety Council. Separately bound copies of this section for exchange purposes are provided the Society by the Council.

OUR PRESIDENT SPEAKS ON SAFETY

BY NOW, I AM SURE that you have reviewed the January, 1961 issue of "Engineering For Safety" which contains the Society's annual report.

The section of the report which should be of real interest to chapters is the one entitled "Report on Society Chapters." Were you not impressed by the many activities of chapters in the areas of education and training, and public and community safety? Herein lies one of the many avenues to increase recognition of the value of the safety profession to a community.

An A.S.S.E. chapter can meet the requisites of the Society by doing little more than meeting each month and by engaging in only Society business. This minimum type of program however, fails to take advantage of the tremendous potential available in a chapter to enhance the stature of the safety engineer in the eyes of the public and business community and thereby open greater opportunities to him. The chapter must be constantly alert for ways in which it can render service and initiate action where it feels that it will be of benefit or where it is needed.

Has your chapter approached vocational school authorities to offer assistance in establishing shop safety programs? Is it promoting school safety through the P.T.A.? Is it working with Junior Achievement? Does it collaborate with local safety councils in the sponsorship of traffic safety programs and conferences? These are just a few of the areas in which time, effort and money can be expended profitably.

Is your chapter carrying its educational programs to all groups even legislatures and code making authorities and agencies? There exists a lack of understanding of the role the Society or its chapters should or could play in this field. We are planning to develop certain policy directives on this subject later this year.

A tax exempt organization such as ours cannot aggressively seek to promote or oppose legislation as a substantial part of its activities. As an organization directed to educational and research work in the field of accident prevention, we can however, provide information to anyone who has an interest in such matters.

If legislation is proposed in a state, it would be perfectly proper for the chapters in that state to carefully study such proposed legislation if it pertains to the field of accident prevention. After such study it is also perfectly proper to write to the legislators or others and submit information which will be helpful to those concerned in making an intelligent decision.

Similarly, in the study of regulatory codes, it is not uncommon for states and local governmental agencies to secure the advice and recommendations of technically qualified persons in the field. Here again, the chapter or chapters can provide information which will help make the codes and regulations workable and sound.

This type of educational activity is one that is both worthwhile and necessary to achieve the purposes of the Society. When the information is insufficient this indicates the need for further study and research with which, of course, we should be concerned.

If the American Society of Safety Engineers is to become a positive influence in the advancement of the safety profession, its activities must encourage in the eyes of the public, of industry and of other technical societies, the "image" of a society which officially and solely represents the safety profession. Although national committee activities can be instrumental in creating this "image," it is best accomplished at the chapter level through participation in local technical society affairs, school and college safety, and community safety.

George L. Gorbell

GEORGE L. GORBELL, PRESIDENT
AMERICAN SOCIETY OF SAFETY ENGINEERS

When Are Safety Belts *Unsafe?*

by C. W. ROSE and JOHN A. DICKINSON

WHEN DO YOU DISCARD a used safety belt? This question has no pat answer, and is one that has posed a serious problem to industry ever since safety belts have been used. Ironically, safety belts cannot be strength-tested and then put back into service, because any test which is severe enough to *prove* safety, may so damage the belt as to make it unsafe after the test. On the other hand, belts cannot be economically discarded according to any calendar schedule, for some belts may have had many times the wear or damage as others of the same age.

This problem was the subject of an article by C. W. Rose in October, 1948, entitled "When Can We Stop Guessing About Safety Belts." Another article on this subject appeared in March, 1953, entitled "How Safe Is That Safety Belt." Those articles outlined the "Safti-graph" method of testing belts. This paper simplifies the test method, suggests test procedure and specific standards and provides a complete, practical program.

A full-load test – carried to complete destruction – is the only test which should ever be applied to safety belts. The information gained from such testing must be preserved and used as an experience guide for inspections in the future. Belts should be approved or discarded solely on the basis of visual inspection. It is absolutely essential, therefore, that this inspection be done by someone who has adequate criteria and training upon which to base his judgment.

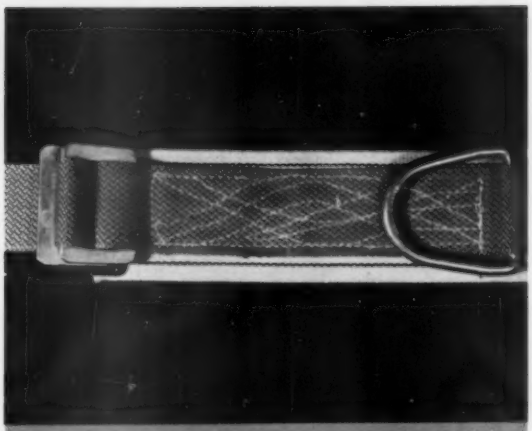
The program should start with the most worn or deteriorated belts in service, or in other words, the ones presumably ready for discard. Very little loss is involved in destroying such a belt; certainly a far greater loss is risked if it is kept in service. All such belts should be taken out of service and tested until the accumulated data is sufficient to give adequate criteria for judgment. Later in the program only unusual conditions will require further testing.

For use in testing worn construction workers' belts, a static load test is suggested for several reasons. It measures the strength of each belt from weakest to

C. W. Rose, Colorado Chapter, is president of Rose Manufacturing Co., manufacturers of safety equipment. Mr. Rose's career in designing and testing safety equipment goes back to 1915, when he and his brother started the Student Window Cleaners service, forerunner of the Rose Co. He joined the Society in 1944 and this is his first *Journal* article.

John A. Dickinson, safety consultant and former chief of the Codes and Specifications Section, National Bureau of Standards, has been in safety work for more than 50 years and is a charter member of the Society and its forerunner, the United Association of Casualty Inspectors. This is Mr. Dickinson's second article in the *Journal*.

George Branson, safety director of Morrison Knudsen Co., left, shown with Author C. W. Rose, testing used safety belts.



The critical wear section of a construction worker's safety belt is shown in this picture. The belt is new.

strongest. It is usually the most convenient method. Equipment is normally available or readily devised (any heavy duty winch, crane, or hydraulic jack can be used for power).

Also it is a safe guide for judging impact. For example, if a belt will stand 4,000 pounds of static load, it will stand somewhat more than 4,000 pounds of impact loading (such as occurs in stopping a man at the end of a free fall). This has been established through research by the National Bureau of Standards, covering web straps and ropes.

MEASURE ELONGATION

In these tests on used belts, the loading should be applied in a pull from one Dee ring to a freely-rotating mandrel or cylinder inside the belt opposite the Dee ring. This will test the Dee ring and its attachment to the belt as well as other components of the belt assembly. Elongation of the belt should be measured during the test and a record kept of such elongation, whether due to stretch, slippage, tearing or other factors. This is essential, because elongation, in case of a workman's fall, might cause him to slip out of the belt upon impact.

Since elongation will be influenced by the size of the mandrel and by the adjusted length of the belt, standards must be set for these measurements. We suggest, therefore, a 10-inch diameter mandrel as convenient and practical, and that the belt be adjusted to a circumference of 36 inches inside. The testing machine should be run at a speed slow enough to get an accurate measurement of the elongation of the belt.

Since the tests and test records are solely for the guidance of human judgment, and since a safety factor is included in the suggested test standard to cover inaccurate judgment of the inspector and additional wear until the next inspection period, slight inaccuracies in the test procedure are acceptable.

Elongation should be measured during the test between the two heads of the test rig, beginning at a loading of 50 pounds to eliminate all slack, and ending at a loading of 4,500 pounds. A total elongation distance between these two measurements of 4½ inches if due to elastic stretch, or of 1 inch if due to slippage, tearing or other defects, should be ruled unsafe. However, if the belt is to be used with a shock absorber, the maximum elongation distance should be considered as 3½ inches at 2,500 pounds of loading.

A realistic standard for approving or discarding used belts would be to discard all belts have an estimated strength under 4,500 pounds if the belt is to be used without a shock absorber. However, if a shock absorber is to be used with the belt, 2,500 pounds should be set as the safe limit for continued use because an adequate shock absorber will keep the impact loading on the belt, as well as on the user well below the 2,500 pound limit.

BASED ON AUTHORITATIVE STUDY

These recommended 4,500 and 2,500 pound limits are based on an authoritative study by a research committee of The American Society of Safety Engineers which was published by the National Safety Council in 1952 under the title "Final Report on the A.S.S.E. Research Project: Safety Belts, Harnesses, and Accessories." That report stated the conclusion that "an impact of 4,000 pounds is almost certain to result in injury, and that such equipment should be so designed that impact forces produced in stopping a free fall will be limited to 2,000 pounds."

Since belt failure usually results in sudden death – *a far greater hazard than the pressure of the belt against the body* – it follows that 4,000 pounds should be the absolute minimum permissible strength of a belt if it is to be used *without* a shock absorber. Setting the inspection standard at 4,500 pounds provides a safety factor to cover human error of the inspector, as well as wear and deterioration until the next inspection.

Inspections should be frequent, depending upon the uses of the belts. This, too, can be determined only after the program has been put into effect. Belts judged inadequate for full impact duty may still be used where the possibility of severe impact is eliminated.

This 2,500 pounds strength is for use *with* shock absorbers and 4,500 pounds strength for use *without* shock absorbers. It is *not* recommended that belts be tested to these loadings and then put back into service. As stated earlier, a test of this severity may damage the belt so much that it will have far *less* strength after the test. It is recommended these belts be judged by visual inspection and any belt with estimated strength below these limits, be discarded.

DEFINITE CRITERIA NEEDED

The inspector must have experience and training for such judgment, as well as definite criteria on which to base his decisions. For this purpose it is essential to preserve the tested belts with their recorded data, including an adequate photographic record.

This record should start with large (minimum 8″ x 10″) clear picture of belts in use or to be used, together with accurate test data on such new belts. Similar pictures of all *used* belts with detail shots of the most damaged areas, taken both before and after testing must also be kept, together with their test data.

The inspector will soon learn to judge belts with the common types of wear or damage, and later, unusual cases. Copies of these photos and test data can then be carried into the field on inspection trips, or sent to other branches or locations, as inspection training aids. It is essential that the inspector be able to judge belts with reasonable accuracy, as well as convince others of the validity of the tests and accuracy of his decisions.

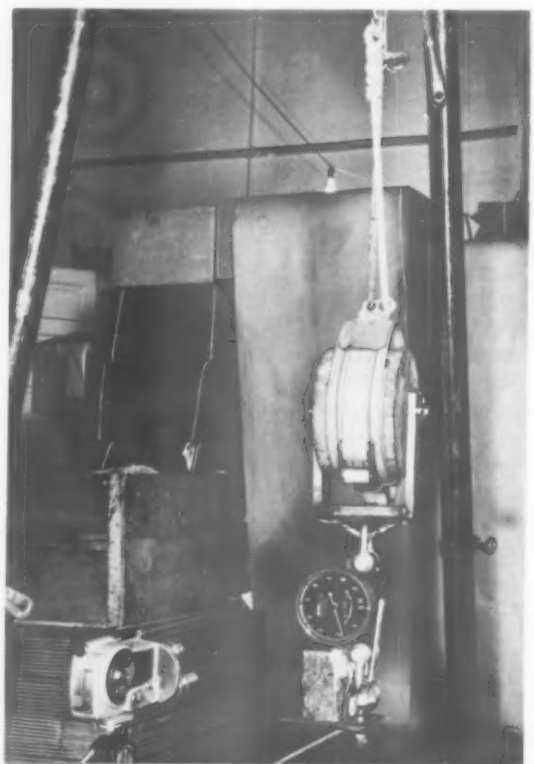
Now, what about lanyards or life lines – sometimes called tail lines.

A steel cable lanyard without shock absorber should *never* be used where a free fall of more than a foot or so is possible. The cable's rigidity is likely to deliver a jolt far in excess of safe limits. A steel cable should be used *only* for positioning the workman to his job, and then only where the possibility of free fall has been eliminated, or reduced to an absolute minimum.

One-half inch manila rope should not be used if a free fall is possible. It is both too *rigid* and too *weak*. Its total straight line strength when new is only 2,650 pounds. This will be reduced approximately 10 per cent by any splice, and up to 50 per cent or more by any type of knot.

A three-quarter inch manila rope has adequate strength if used with splices instead of knots. The longer the better if it is anchored far above the workman's head so he will be protected by the yield or stretch a long rope provides. One-half inch *nylon* rope is ideal for lanyards because of its great strength as well as great elasticity, which cushions the jolt.

Lanyards should be subjected to *two* kinds of tests, static and dynamic, but *not* both types of tests on the same lanyard. For the tests, similar methods and standards as used on belts may be employed. However, a simple static load test on a lanyard measures



Loading and elongation of window cleaner's belt is measured to determine ability to take impact loading.

Jonathan E. Sharp, vice president of Rose Manufacturing Co., demonstrates test of construction belt for visitor.

only the *strength* of the lanyard. It will give no indication of the magnitude of free fall it can decelerate, nor the amount of impact it will transmit to the belt and its wearer. This is where dynamic testing is required. Dynamic tests can be made with strain gauge equipment, if available, or by use of the safti-graph method mentioned earlier.

A single drop test without strain gauge or safti-graph measurements merely shows whether the lanyard broke or held. It gives no additional information as to just *how* strong the lanyard was or the magnitude of drop test it *could* take. Such information is vital for the proper training of the inspector.

This information can be obtained by *progressive* drop tests. A simple and practical method is to attach one end of the lanyard to a 200 pound rigid weight, and the other end to a heavy chain or steel cable attached to a rigid support. Then from its position of rest, hanging from the lanyard, raise the weight just *one foot* and drop it freely.

Drop the weight *two feet* on the second test, three feet on the third test, and so on to complete failure. This gives a fairly accurate rating of the lanyard according to the number of drop tests it can withstand.

PROGRESSIVE TEST STANDARD

An adequate standard for progressive testing is a 200-pound weight progressively dropped up to the greatest possible distance a workman could fall in his use of the equipment. This will be on the safe side because the rigid weight will hit with greater force than would a man's body, and also because the progressive drops will usually cause failure at one or two feet less than would occur in a single drop test.

For free falls of any considerable distance (anything over a five or six-foot fall) a shock absorber should always be used. Two different kinds of shock absorbers are available. They are designed for different types of work, but either one of them will give adequate protection from damaging shock.

One is a Unolyn Coil Shock Absorber. The other is a spring clamp on a rope, known as a Rope Grab Shock Absorber. Either of these will hold impact loading down to well within the tolerance of both the man and the belt.

SPECIAL TEST PROBLEM

Window cleaners' belts present a special test problem, since the lanyard or terminal line is an integral part of the belt. This line and its connection with the belt must also be tested.

The American Standards Association has recently completed a new code on window cleaning safety. It is "Safety Code for Window Cleaning A 39.1." This code establishes a standard drop test for approval of new belts.

The test consists of a 350 pound *rigid* weight, buckled into the belt and dropped four feet, with only *one* of the window bolt terminals fastened. This code also specifies that belts must be constantly maintained in such condition as to meet this test. It is highly recommended that this new code be considered by all safety authorities.

We believe that each belt manufacturer should supply adequate photography and test data on his own new belts, but we firmly believe that inspection and check testing – of both new and used belts – should be done locally by an employee or by an independent testing laboratory. It should never be delegated to any manufacturer of belts.

A word of caution: all testing should be well shielded from personnel. Testing belts to destruction is hazardous. At the higher loadings, a broken piece of metal can become a projectile with lethal force.

SELLING

Dr. Jack N. Peterman is director of psychological research for Buchen Advertising, Inc. in Chicago. He has been active in the study and practice of applied psychology and market research since 1936. Dr. Peterman is a graduate of Rutgers University and has a master's degree from the University of Massachusetts and a doctorate from the University of Michigan.

I SHOULD LIKE to set the stage for this discussion by means of two short quotations – one from a recent National Safety Council Data Sheeet and one from an article in *Business Horizons*. The National Safety Council starts off its Data Sheet No. 483 on "Management Safety Policies" by stating:

> The attitude toward accident prevention on the part of top management in a company or a plant is almost invariably reflected in the attitude of the

SAFETY TO MANAGEMENT

Some Psychological Considerations

by DR. JACK N. PETERMAN

> supervisory force; similarly, the worker's attitude is usually the same as his supervisor's. Thus, if the top executive is not genuinely interested in preventing accidents and injuries, no one else is likely to be. Since this basic fact applies to every level of management and supervision, an accident control program must result from top management's announced and demonstrated interest if employee co-operation and participation are to be obtained.

Similarly, Clayton F. Van Pelt, in a recent issue of *Business Horizons,* begins his article on "Industry's Inexcusable Accident Toll' with the theme statement that:

> Management's leadership is the major factor in every safety success story.

If this be so – and I find it difficult to imagine that anyone would seriously challenge these statements – then our topic here is not just *an* important one but rather, *the* important one for the members of this society.

Perhaps we can best approach our topic by analytically considering the question, "Why *should* management be interested in safety?" I would like to propose that there are three major classes of reasons:

1. The moral, ethical, or humane reasons
2. The existence of statutory or legal requirements
3. The cold cash, or monetary, considerations

Under the first category – namely, the moral or humane considerations – are subsumed such facts as that most, if not all people in management cannot avoid at least *some* feelings of responsibility for the loss of life or the occurrence of human suffering that accidents entail. Management people would obviously rather avoid or minimize guilt feelings that the occurrence of accidents inevitably involve. In addition, in our society, it is obviously a personal, moral virtue to do whatever is necessary to minimize human suffering by others.

The second major reason why management should be interested in safety is the fact that the law requires it. This is the area in which management has little choice or prerogative, as to what it will, or will not, do. The encoded specifications of our culture specify certain minimum requirements and, willingly, or unwilling, management has to fulfill them.

Finally, there is the matter of cost, to the organization, which accidents entail. Here we can spell out two somewhat separate though overlapping kinds of cost – direct costs and indirect costs. The direct costs in a company or plant, I am sure, are well known to you. These are:

- The cost of accident insurance
- The cost of damaged equipment
- The cost of spoilage, ruined materials and lower quality of products
- The appreciable cost of lower, or decreased output
- The cost of disrupted production schedules

The indirect costs of accidents are somewhat less commonly appreciated. Though the specific, indirect costs that accidents involve will vary from operation to operation, the following three are fairly common and will serve as examples.

On the one hand, high accident rates in a company or plant affect the good will in the community towards that company. Another effect of a high accident rate in a company is that it can, and often does, adversely affect the good will towards the company by customers – customers who find their delivery schedules upset by accidents. And, finally, there is the very appreciable, though difficult to define, effect on the labor market when potential employees know that a certain plant or company has a high accident rate.

These, in brief, are the reasons why management should, or must, be interested in safety. These are the reasons that you, as safety engineers are well aware of and, I am certain, have used and stated recurrently in your efforts to obtain management's cooperation in eliminating preventable accidents. But, they are far from the whole story.

If they were, there would be no need for the appreciable number of articles and discussions on this topic – including this one. There is obviously more to the picture. It is these other parts of the picture that I want to discuss now.

TWO MAJOR CONSIDERATIONS

I would like to propose that there are two major kinds of considerations that make the problem a problem – why management has to be *sold* safety. I would like to propose that selling safety to management involves the overcoming of appreciable resistence due to two casual factors:

1. The *costs* that safety measures and safety programs involve, and
2. The fact that management's active participation in a safety program involves the overcoming of very real, personal, psychological hurdles on the part of individual management people.

Insofar as the *costs* of safety is concerned, we can deal with them briefly. The major costs that are usually involved here are:

- The cost of protective equipment.
- The cost of safety devices.
- The costs of medical and first aid services.
- The costs of administrating safety services and programs.

Obviously these costs are often appreciable and, just as obviously, management can be expected to be very well aware of that fact. In the final analysis the cold economics of the business world will not permit a business man to continue any operation in which either the cost of accidents or the cost of preventing them exceeds the profit potential of his operation.

In this area, the job of the safety engineer is obviously to maximize the optimum. It would be truly presumptious if I were to attempt to tell you *how*, and *what*, needs to be done, and can best be done, in this area.

WHY MANAGEMENT RESISTS

There is one area, however, in which I might suggest some possibly new insights – namely, management's resistances to active participation in safety programs.

To begin with, I would like to call your attention to a psychological mechanism which has been found to play a very appreciable role in a somewhat different, though closely related field – insurance.

In studying the selling and buying of personal, as well as accident insurance, we have found that most individuals are all too often turned away from an objective consideration of their need for the protection that insurance offers by the ubiquitous feeling (usually buried in the adult's unconscious) that each of us is, after all, something special.

To a greater or lesser degree each of us clings to the feeling that the undesirable and catastrophic that happen to others can't happen to us. Deep down, each of us dearly harbors the conviction that, despite his experience to date, he is really Dame Fortune's favorite.

It is this underlying feeling (common and unrealistic though it may be) that gives rise to the attitude that says, "Oh sure, accidents happen – to others," and then by implication ". . . but not to me." The same fundamental mechanism with regard to purchasing insurance, also goes into operation in the need to take action concerning a safety program.

DIFFICULT TO ACCEPT

While the individual manager is ready and willing to accept, rationally, that accidents do occur in other people's operations and plants, he is loath to accept that this can happen to him (that is, in his plant, office or company). This is sometimes reflected in the half facetiously expressed attitude, "Why should I bet against myself?" It is as if, by admitting the possibility of misfortune, the individual were resigning his special prerogatives as a favorite of fortune and was thereby leaving himself open to, if not downright inviting, the occurrence of calamity.

In this connection it should be remembered that the kind of people we are talking about, namely, management, are much more likely to be affected by this kind of unconscious feeling, than is true of people in general. Remember, that we are dealing with

individuals who are likely to have experienced an appreciable degree of success in their work.

In spite of humorous gags to the contrary, most management people achieve their position by performing successfully their managerial responsibilities. Because of this, they are all the more likely to view themselves as favored by fortune. Under the circumstance, and unless his particular plant, office or business has just recently had a series of unfortunate accidents he is all the more likely to feel that it is improbable that misfortunate will strike him, or his.

There is however, another side of this coin – but it *is* the same coin. This is the fact that the desire to take steps to institute safety measures or a safety program is, in large measure, dependent upon management's uncertainty, or *knowledge* that it *cannot be certain* that accidents will *not* happen. It is this uncertainty, that is basic to management's need to consider the problem of safety.

"WITHDRAWAL REACTION"

Now, on the face of it, this would seem to require no further elaboration. It does require such elaboration however, because such uncertainty, especially as it relates to the moral, ethical and religious aspects of responsibility for the safety of others – this very same uncertainty is also frequently associated with nearly universal basic feelings of personal insecurity which are highly unpleasant and psychologically painful.

This, of course, is exactly the type of situation which normally produces what psychologists call "withdrawal reactions." Typically, when any experience or subject of consideration is painful or unpleasant, we draw away from it, and, if we cannot escape it in any other way we tend to "purposively forget it."

This is one of the reasons why some management men who, in terms of their reasonable knowledge and administrative obligation, should be more receptive to safety programs, find all manner of rationalization why specific safety steps cannot be initiated *now*, and keep putting off doing anything about it.

The very act of doing something about accidents is for some administrators an unpleasant admission of their own own limitations and, in addition to awakening their existing insecurity feelings, augments their tendency to withdraw from a situation which brings them into painful conflict with themselves – since as I indicated before, in his unconscious, every person (especially the successful one) is convinced that he is especially lucky.

Each time that he is forced by circumstances (or by a safety engineer) to think about, or to attend to matters involving safety, he is also forced to accept that he is, after all, *not* something special.

Little wonder then, that the manager so often finds all manner of rationalization for putting off decisions about taking special action concerning safety. This is why efforts to sell safety to management which stress the fear component and in which the "This can happen to you" theme is predominant, so often fails to convince the individual management executive that the "you" part of the message refers to *him*.

USE POSITIVE APPEAL

Looked at in this way, we would seem, at first blush, to have here a problem with no solution. Man's basic nature being what it is, the act of dealing with accidents and accident prevention will probably always carry negative associations for the management men to whom safety programs have to be sold. A positive appeal however, is possible.

This should be based on the very fact that personal insecurity feelings and attitudes are both the underlying reasons for, as well as the deterrents against, taking action with regard to safety problems. What is required here is the stressing of the mental (as well as the economic) security which an adequate safety program provides – not only for the employees whose safety is at stake, but also for management people themselves.

The point is that the very act of planning and implementing a safety program needs to be identified as a gratifying, security enhancing, step for management. This appeal would have to go easy on the negative aspects of the problem, and concentrate upon, and emphasize, the advantages that accrue from the presence of an adequate safety program.

FREEDOM TO MANAGE

Of course, superficially, it may appear to be much easier to list and illustrate all the frightening costs of accidents to management and to attempt to frighten them into action on a safety program. I propose, however, that you are likely to be more consistently successful if, instead, you emphasize the *positive* advantages that result from a positive program.

To do so without making fear arousing comparisons which show the undesirable and costly effects of not having such a program is, of course, not easy. This is where each of you has to use your best intelligence and ingenuity in focusing your selling pitch on the positive highlights. And, in the final analysis what is most positive for management is freedom to manage productively – freedom which they can gain only by eliminating the time and money consuming headaches which accidents involve.

A SAFETY JOB— OR JOB SAFETY?

by JOHN W. GURRY

SAFETY ENGINEERS in industrial plants, laboratories, and insurance accident departments have a special commodity to sell. This commodity is the sum of protection knowledge and ideas which will prevent injury to a fellow human being. How many sales are we making?

Of what good is our storehouse of ideas and experience, if the worker at the end of the management chain is left to clumsily improvise respiratory protection with a wet cloth, or eye protection by pulling down his cap? The lack of proper protection is just as real as if there were *no* safety program.

A technician uses thin wall refrigerator tubing and 45° flared fittings from his tool box on a high pressure manifold connection. It does not help his blasted features a few minutes later to learn that his injury was unnecessary because the stockroom carried a full line of tubing and fittings approved by the engineering department.

We set up the system and thought we had done our job. But we did not sell it down the line. Eighty-five percent of the people suffering injuries in our lab say, in effect, "I knew better than that," or more to the point, "Sure I knew, but someone still should have told me."

HOW TO SELL SAFETY

How do you sell an idea? In this safety business, we have to do more than display goggles and talk hard hats. A recommendation to remove the litter and shavings piled over the motor driving the circular saw will not eliminate the fire hazard. Calling the plant engineer's attention to a ceiling sagging under the weight of electronic gear stored overhead will not shore it up.

John W. Gurry, safety engineer at AVCO-Everett Research Laboratory, has been a member of our Society since 1956 and is a member of the Boston Chapter. He has a B.S. in civil engineering from Union College and has been in safety work since 1953. Mr. Gurry joined AVCO in 1956. This is his first article to be published in the *Journal*.

I was amazed to observe a shop leader argue like blazes to show why a training meeting he had scheduled should not be postponed. Asked why, he said, "I really didn't care, but I just didn't like the idea of being ousted." How hard do you and I fight for what we think should be done? Do we marshal our ideas? Do we look at it the way we think the boss might, point out efficiency improvements and the elimination of lost time or waste?

REDUCTION OF WASTE

Work simplification people tell us that work is the use of time, energy, materials, and space. Good work is the right use of these items. Poor work is wrong use. The difference they call waste. Is there any management that is not reached by an argument to reduce waste of time, materials, or space?

Another way to sell an idea might be to figure how to make *doing it* less painful than *not* doing it. A supervisor who's "done it a thousand times and never had an accident yet" might have to be put to trouble to get an idea across.

The pointed questions, investigations, hearings, and reports he undergoes when one of his men is hurt could prove to be of more trouble than showing his men the proper use of their tools. If the investigation is made for each type of injury which *could* be disabling – whether or not serious injury actually resulted – he might get the "brother's keeper" habit sooner.

If the foreman's unsafe actions shout so loudly his men cannot hear his safety urgings, he himself is not sold. His men will continue to be injured. He may be too.

GO TO THE CONSUMER

The safety engineer may be an expert trouble shooter. He may have every safe procedure written down, every shop properly stocked with protective equipment. He may even be one of those rare persons who does not take the credit when an idea he originated finally gets into action.

His firm will still have a poor disabling injury record if the men do not "buy" the need for accident prevention. Someone's got to bring the product to the customer. You don't sell safety from an office.

the electronic driver

John W. Leggat, Jr., safety director of the General Motors Technical Center, joined the Society in 1958 and is a member of the Greater Detroit Chapter. He has a B.S. degree from Michigan State University and came to General Motors in 1945. He was named to his present position in 1957. This is Mr. Leggat's first article in the *Journal*.

—IS IT COMING?

by JOHN W. LEGGAT, JR.

THERE IS NO NEED to discuss the extreme interest developed and efforts expended in recent years by government and industry throughout the country toward improved highway safety. Federal, state, city and other governmental agencies each are recognized as having a responsibility in this field.

Not so readily recognized is the fact that the transportation industry, and the automotive industry in particular, also are aware of a responsibility toward improvement of safety in the mechanical equipment and in the method of control of its product, the automobile.

One way to emphasize this sense of responsibility is to describe some past developments of the industry and some of the current work directed specifically toward improvement of the safety aspect of vehicle operation.

Current problems of automotive safety engineers concerned with product safety vary from the loca-

tion, type and control of headlights in the front to the problems relating to a safe exhaust system all the way through to the tailpipe. These engineers are usually dealing with components of cars which will not hit the road until next year or the following year, so that they must anticipate problems which will be precipitated by proposed model changes – both exterior visible changes and hidden mechanical modifications.

But these deal with recognized current problems. What of the more distant future?

Highways are becoming more congested; people want to travel faster; they want to enjoy more of the scenery; and they want to reach where they are going without accident.

Much study is being given these problems across the nation both within the automotive industry and outside it. These studies involve not only automobile improvements, but also highway developments, traffic control and driver education.

One approach suggests itself as a result of recent technological advances in the field of electronics. Electronic equipment is already being applied to the control of aircraft. It may be feasible to adopt such control to automotive travel.

What about radio? How can some of the problems of vehicle control be simplified or eliminated in order to relieve the driver of some responsibilities and permit him to pay more attention to fringe areas which, nevertheless, have been frequent causes of accidents?

One of the major automobile companies has made a study of the frequency with which distracting influences might arise in a driving situation. It revealed that a driver can be exposed to between 15 and 45 events per second in an average driving situation. This same driver can observe in detail only two or three such events and probably reaches decisions at a much lower rate.

NEED FOR CONCENTRATION

Many of these events, naturally, are not hazardous in themselves, but can reduce the opportunity to concentrate on significant details. A passenger in the car can be a help or a hindrance depending upon whether he is alert and gives the driver room, or whether she has her head on his shoulder and is crowding him comfortably. While I would not suggest substitution of an automatic device in the latter case, it does appear to be reasonable to expect to obtain assistance in reducing the need for concentrating attention in some areas.

This is not to say such equipment is currently available, or that if available, *all* traffic problems would be solved. Sound engineering developments in this field must be accompanied by progress in such other areas as enforcement and education. The total problem is extremely complex and there can be no single approach, or panacea, for traffic accidents.

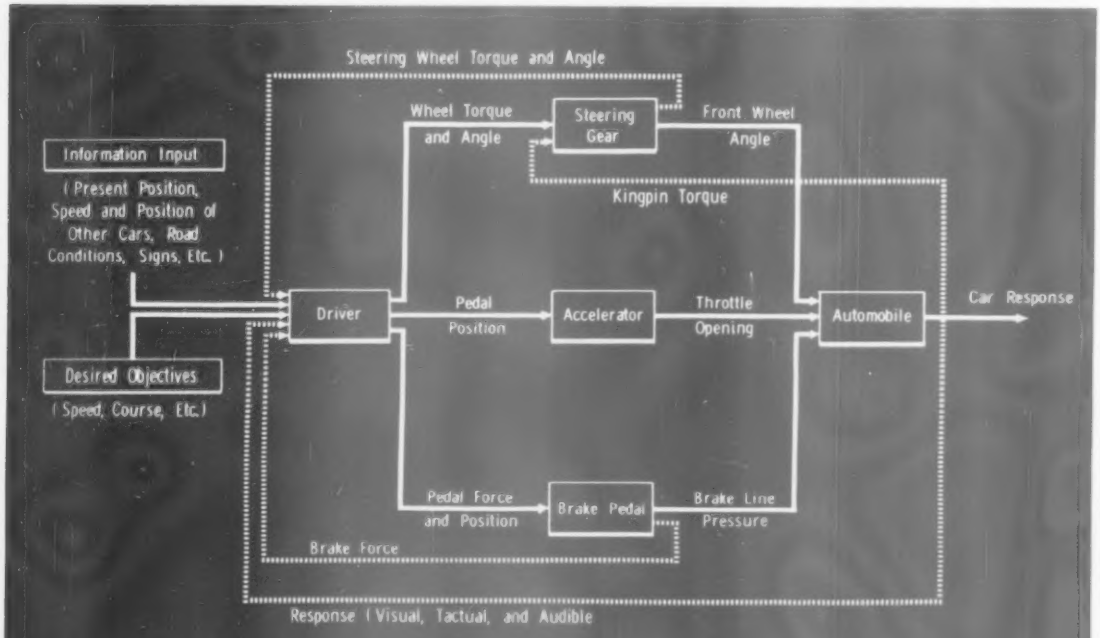


FIGURE 1 - CAR DRIVER SYSTEM

Electronic control of passenger cars precipitates many new problems. Any proposed system can be considered an electronic chauffer or co-driver, so that before development can be completed, we first must know something about the *functions* of the driver.

Drivers have been the subject of intensive study, but I think that with even a cursory examination, we can recognize the complete driver as a very complex being with a very complex job. However, his duties can be basically reduced to the performance of functions of three general kinds.

(1) Perception
(2) Decision
(3) Motor

His senses make him aware of the motion of his own vehicle, the relative position and movement with respect to other vehicles, the desired path, the information on road signs, weather conditions which have an influence upon the car's responses and the presence of pedestrians.

Figure 1 is a simplified block diagram of the car-driver system. Information input to the driver includes those things previously mentioned plus such things the driver has been taught about rules of the road, courtesy, etc. Other input information may originate as side accelleration, audible tire squeal, and steering feel. The driver perceives these things through the use of his visual, audio, and tactile senses. He becomes an integrator of the information in terms of both the present situation and the anticipated immediate future. All these things are perception.

PROCESS OF INTEGRATION

Decisions are reached as a result of this process of integration; and decisions in turn result in motor responses of the driver. In a car these responses result in angular displacement of, and torque inputs to, the steering wheel and in position control of the throttle and brakes.

Development of such devices as power steering and power brakes are past application of mechanical devices intended to reduce control efforts; and automatic headlight dimmer controls and automatic transmissions are examples of devices already available to reduce the number of events faced by a driver in a given situation.

All of the driver's control imputs (or motor efforts) are utilized to regulate the car motion, its speed, position, and heading in the two dimensional space in which it travels.

In reviewing the functions which the driver must perform, it is obvious that he might be further assisted in operating a vehicle by supplying him limited aids for perceiving the situation, by simplifying his decisions, or by reducing his motor effort. One of these devices is Hy-Com, which is intended as a driver aid (spoken of earlier as a co-driver).

Such a device could be made sufficiently compact to permit temporary installation as a car entered a toll road, use while en route, and removal upon exit.

Another approach is a means for completely replacing the driver with a system that will perform all of the necessary functions for automatic operation of the car on such a highway. Here, a magnetic field generated by a current passing through wires buried in the road is coupled with a suitable means of detection mounted in the vehicle. The combination manipulates a servo type steering mechanism and senses obstacles in the path of the car.

AUTOMATIC CONTROL

Upon review of the concept of the completely automatic control system, it becomes apparent that equipment is *probably* required in both the vehicle and the road. Actually, however, the designer has a wide lattitude of choice, as to the proportion of the total equipment required in each. Mechanical means of guidance *could* be mounted in the road with *no* additional equipment in the car. A train represents such an application. It is also within the realm of reason to consider an electronic system within the car with essentially *no* additional equipment in the road. A combination is probably more likely.

Naturally, city driving complicates the automatic control problem and for this reason, initial efforts have been centered around application to controlled access rural highways.

Obstacle detection presents a serious problem in any automatic guidance system. Such a system must sense other vehicles being overtaken or stalled, and even non-metallic objects such as pedestrians, if any true relief is expected for the driver.

On the other hand, the system must be *highly* selective to minimize or eliminate interference by such things as cars stalled or being overtaken in other lanes (see Figure 2) or at the side of the road.

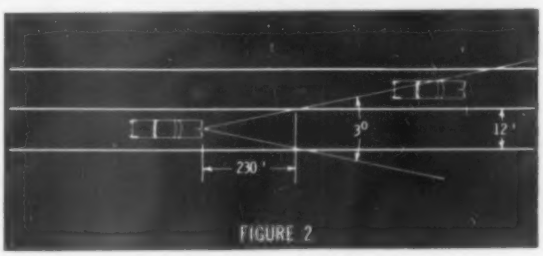


FIGURE 2

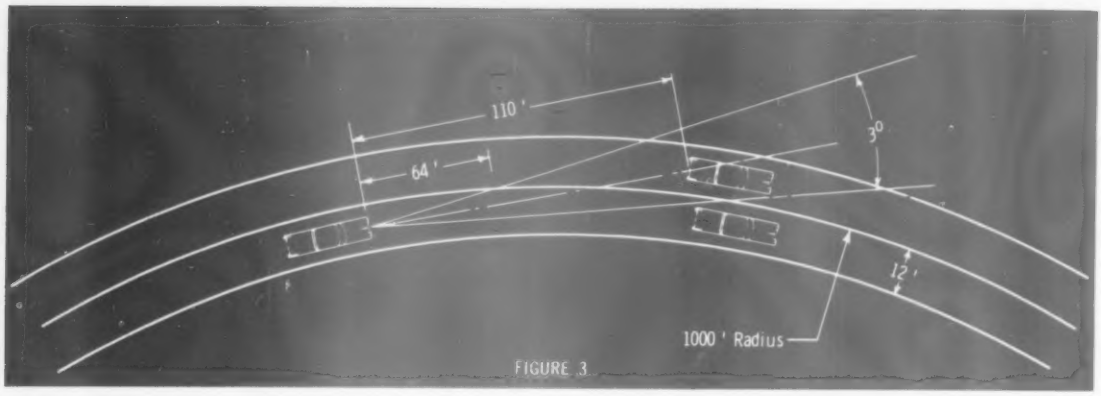


FIGURE 3

Sensing around curves (Figure 3) and at the bottom and the crest of a hill (Figure 4) can be difficult also.

Numerous sensing devices may be adaptable; for example, photocells, radar, ultrasonics, or infra red detectors, but the problem of selectivity and evaluation exists in all but the human senses.

The problem of reliability is not being overlooked. At the present time, vehicle accident statistics reveal that about 96.5 per cent of all accidents result from some driver error. Only about 3.5 per cent are caused by mechanical failure of the vehicle itself.

It has been proposed that the automatic control system could drastically reduce the 96.5 per cent figure. It must accomplish this, however, without a corresponding increase in the current 3.5 per cent figure.

DRIVERS MORE RELIABLE?

Although the general impression is that drivers are relatively unreliable, it is questionable whether even simple electronic devices are as reliable at this time. And it is easy to assume that an electronic control system failure would precipitate an accident of considerable magnitude.

Comparison with National Safety Council figures suggests that control system failure which would precipitate a serious accident could not be permitted more than once per 16,000,000 miles or 400,000 hours to maintain even our present safety record of fatalities. Production of electronic control systems of such reliability is certainly a challenge at the present time.

ADVANTAGES IN DRIVING

Another of the complicating factors which has not been mentioned before is the fact that the substitute control system must not conflict with, or limit the basic advantages inherent in, the use of privately owned cars. Some of these are:

(1) Convenience – opportunity for direct service with complete choice of time or arrival and departure.
(2) Flexibility – Ability to change plans at will.
(3) Comfort – Pleasant environment without need for transfer of personnel or baggage.

In summary, we have been discussing application of engineering technology to improve control and safety of existing types of land vehicles. Such vehicles, themselves, will probably still be recognizable in the forseeable future, but *some* control devices intended to reduce or eliminate driver functions may appear. Many of these developments will perform the *dual* functions of increasing driving pleasure and enhancing safety.

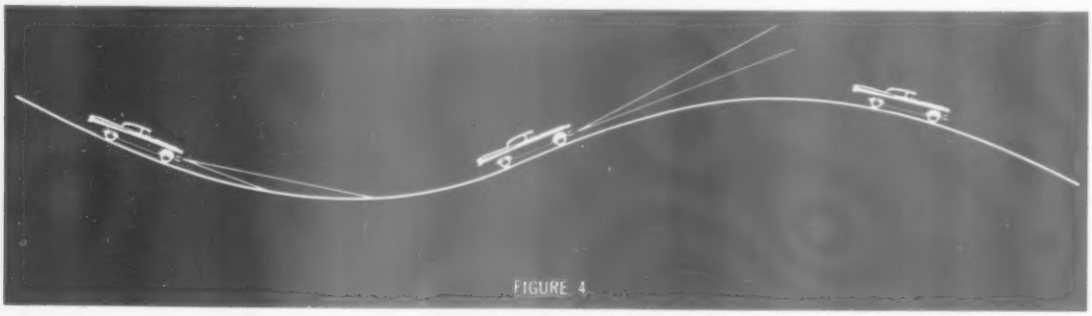


FIGURE 4

Abstracts

SAFETY AND RELATED FIELDS

All abstracts being published in the *Journal* are supplied by Engineering Index Inc., Engineering Societies Library, 29 W. 39th St., New York 18, N.Y. Because of space limitations, comparatively few of the abstracts from this service can be published in each *Journal* issue. However, subscriptions to the service are available from Engineering Index Inc., which will send, on request, a free 16 page catalog describing the service. For a nominal charge, Index subscribers may obtain copies of any of the articles which have been abstracted and, also, English translations of those published in foreign languages.

ACCIDENT PREVENTION

Check List Minimizes Accidents While Drilling with Gaseous Fluids, G. Jackson. *World Oil,* Vol. 151, No. 5 (October 1960), p. 128-33. Guide to safety planning and operation which will simplify work of supervisory personnel. Uses check list technique; check lists, questions and discussions for pre-work safety planning, rigging up and drilling. Check lists are intended primarily for air drilling but can be adapted to natural gas drilling safety.

Injury Experience in Quarrying, 1957 J. C. Machisak, N. W. Kearney, Z. S. Glidden. *U.S. Bureau of Mines – Information Circular* No. 7975, 1960, 55 p. Data on general injury experience, injuries at different kinds of quarries, injury experience by states, selected injury data, and historical injury experience.

Lessons Learned from Accidental Discharge of Ammonia Tanker, L. S. Price. *Canadian Mining Journal,* Vol. 81, No. 9 (September 1960), p. 89-95. Precautions and procedures designed to prevent reoccurrence of accident in which hose failed on temporary ammonia piping arrangement or similar accidents, including regulations for handling liquid ammonia; use of "Lee Hi" high pressure coupling.

Preventing Furnace Explosions, W. L. Livingston. *Combustion,* Vol. 32, No. 3 (September 1960), p. 26-33. Satisfactory system which can reliably prevent furnace explosions will include many inter-related devices and subsystems; conditions that will produce combustion chamber "puff" and proper relationship of flame detector to system capable of preventing those conditions are discussed; scope for development work which should be done before furnace protecting system can be assembled is presented.

Power Plant Safety Program, W. C. Kramer. *Coal Utilization,* Vol. 14, No. 6 (June 1960), p. 21-22. Program in coal fired steam power plant in Indiana with capacity of 600,000 w has resulted in twice attaining 1,000,000 manhours without disabling injury. Every employee is a member of the safety organization and participates through safety meetings, safety suggestions and his elected representatives.

Safety Comes to Electrostatic Spraying. *Engineering,* Vol. 190, No. 4927 (September 23, 1960), p. 418. Advent of Felici electrostatic generator, with flat voltage/current characteristic, inherently safe method of operation and small size; first equipment to use generator is Statron developed by Societe Anonyme de Machines Electrostatiques; Statron comprises electrostatic generator producing 90,000 v, atomizing spray gun with adjustable output up to 5 gal of paint per hr and feeding system for paint; short circuit current of generator is 0.2 ma well below lethal dose.

Safety of Nuclear Powered Merchant Ships, J. Neumann. *Nuclear Engineering,* Vol. 5, No. 47 (April 1960), p. 170-1. Tabulation and analysis of 25 rules proposed by the Ministry of Transport for design and construction of nuclear powered ships to meet necessary safety criteria.

Six Ways to Promote Safety, H. E. Carroll. *Petroleum Refiner,* Vol. 39, No. 7 (July 1960), p. 180-2. To accomplish effectiveness of safety it is recom-

mended to consider use of daily safety report, safety ads, home safety, safety awards, and safety publicity.

Suppressors Tame Explosions When Plant Safeguards Fail. *Iron Age*, Vol. 186, No. 19 (November 10, 1960), p. 174-5. New blast suppressor system suppresses incipient explosions by acting within few thousandths of a second to snuff out blasts before destruction can occur; five-fold action includes suppression (envelopment of explosion with suppressant), venting (opening path to atmosphere for pressure relief), advance inerting (introduction of suppressant into areas away from explosions source to prevent secondary blasts or fires), isolation (blocking of explosion from spreading) and automatic shutdown to protect equipment in other sections of the plant.

What You Should Know About Respirators, H. H. Fawcett. *Air Engineering*, Vol. 2, No. 5, 7, 9 (May 1960), p. 33, (July), p. 46-7 (September), p. 45-7. May: Data on available air supplied respirators. July: Self-supplied respirators, and their applications. September: Smaller self-contained breathing apparatus is discussed; maintenance, training, and general medical precautions, in use of all types of respirators are outlined.

INDUSTRIAL HYGIENE

Air Purification, R. S. Ash. *Institution of Heating and Ventilating Engineers Journal*, Vol. 28 (July 1960) p. 147-9. Use of masking agents, odor counteractants, chemical reactants and adsorption materials for odor control and four methods for air sterilization and air ionization are considered for preventing spread of airborne germs and air contamination; techniques are applicable to hospitals, air raid shelters, schools, restaurants, offices, houses, etc.

Simple Way to Determine Air Contaminants, R. S. Brief. *Air Engineering*, Vol. 2, No. 4 (April 1960) p. 39-41. Simplified way of determining transient contaminant concentrations in in-plant atmosphere; enables maintenance of pure air for safe working conditions. Illustrative examples demonstrate use of nomograph.

MOTOR VEHICLE SAFETY

Cross Median Accident Problems and Corrective Measures in Connecticut, H. S. Ives. *American Highways*, Vol. 39, No. 4 (October 1960), p. 9, 12-14. Analysis of driver deficiency and traffic volume changes which are found to be primary causes for cross median accidents. Preventive measures on future expressways and corrective measures on older expressways and parkways are discussed.

Engineering for Safety With Psychological Yardstick, G. J. Huebner, Jr. *Society of Automotive Engineers* — Paper No. S265 for meeting September 9, 1960 (Detroit Section) 5 p. Problems of evaluating automotive developments in terms of their design suitability and adaptability to human use; ability of man to compare two different quantities was used at Chrysler Research to develop technique for measurement of riding quality of cars; examples given from projects in which analysis of subjective appraisals was used include studies of tire thump and roughness, body shake, engine and exhaust noise, seating comfort, etc.

NOISE CONTROL

Noise Control. *Factory*, Vol. 118, No. 9 (September 1960), p. 109-15. Special report on causes, effect, and control of plant noise; consideration of controlling noise transmission and controlling by personnel protection. Seven methods for noise control are presented.

Interpretation of Noise Spectrograms. *Electrical Manufacturing*, Vol. 66, No. 2 (August 1960), p. 136, 138, 140. How tracing sources and developing remedies for noise in product and equipment design can be accomplished most effectively by analyzing sounds into their component parts, and evaluating elements separately; features of new Audio Spectrum Analyzer which divides sound into bands and measures levels in each frequency range; data are presented graphically.

NUCLEAR SAFETY

Nuclear Accident Survey, J. S. Burkett. *Nuclear Power*, Vol. 5, No. 54 (October 1960), p. 77-80. Review of all known radiation accidents indicates that, with constant care, serious incidents in future atomic energy activities are unlikely. 24 refs.

Safer Packages for Shipping Fuel, W. B. Lewis, R. W. Goin. *Nucleonics*, Vol. 18, No. 7 (July 1960), p. 91, 93. As long as it is possible for packaged units of fissionable materials, each separate package safe in itself, to form critical assembly when units are brought together, hazard of inadvertent criticality will be source of continual concern; shipping sandwich of Cd foil and solid hydrogenous material (wood or polyethylene) is proposed, based on calculations for fictitious nuclear reactor fuel "criticallum," of greater hazard than U-235 or Pu-239; calculated safe dimensions for packaging are summarized in table.

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AMERICAN SOCIETY OF SAFETY ENGINEERS

Membership Information

THE American Society of Safety Engineers has established the following classifications of active membership.

ASSOCIATE MEMBER – To be eligible as Associate Member an applicant shall be at least twenty (20) years of age and

a. Shall have a degree in engineering from a college or university whose curriculum is accredited by the Engineers' Council for Professional Development or shall have legal registration as a professional engineer and, in addition, shall be engaged in safety engineering with at least one (1) year's experience, no time being credited to this one (1) year unless at least fifty (50) per cent of the time was devoted to safety engineering, or shall have supervision over the safety engineering function of his organization; or

b. Shall have a college degree other than that specified in "a" above and, in addition, shall be engaged in safety engineering with at least three (3) years' experience, no time being credited to this three (3) years unless at least fifty (50) per cent of the time each year was devoted to safety engineering; or

c. In lieu of a college degree, shall be engaged in safety engineering with at least five (5) years' experience, no time being credited to this five (5) years unless at least fifty (50) per cent of the time each year was devoted to safety engineering.

MEMBER – To be eligible as a Member an applicant shall be at least thirty (30) years of age, shall have the qualifications required for Associate Membership and also shall have (5) years' experience in addition to that required by and of a type defined in the subsection of the requirements for Associate Member which is applicable to him.

FELLOW – To be eligible as a Fellow, a Member shall be nominated upon the unsolicited recommendation of three (3) other Members, shall be at least forty (40) years of age, shall have been a Member for at least thirteen (13) years, and shall have been engaged in safety enginering for at least twenty (20) years, during at least five (5) years of which he shall have been in responsible charge of the safety engineering function of his organization. In addition, he shall have made an outstanding contribution to the safety engineering profession. Recommendations of candidates for the Fellow classification, along with substantiating data, shall be sent to the Secretary of the Society, who shall submit such recommendations and substantiating data to the Committee on Membership. The Committee on Membership shall report its findings to the Executive Committee for action. Fellows shall be elected by a majority vote of the Executive Committee.

AFFILIATE MEMBER – To be eligible as an Affiliate Member an applicant

a. Shall be at least twenty (20) years of age and shall be engaged in safety engineering with at least one (1) year's experience, no time being credited to this one (1) year unless at least fifty (50) per cent of the time was devoted to safety engineering; he may remain in this classification while qualifying for Associate Member or Member Classification; or

b. Not being engaged in safety engineering, shall be at least twenty-five (25) years of age and shall have pursuits, attainments in accident prevention, or practical experience, extending over a period of at least three (3) years, which shall qualify him to cooperate with members of the Society and to render service to the Society.

for additional information write to

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5 North Wabash Avenue, Suite 1705, Chicago 2, Illinois
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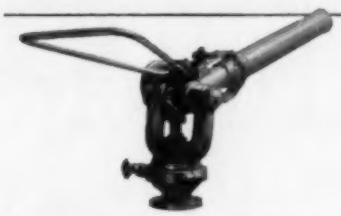

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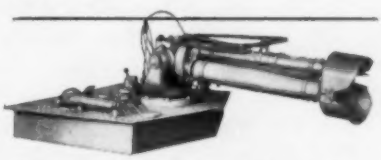
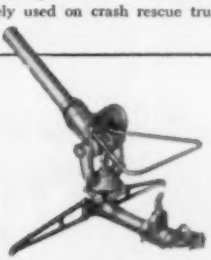


The Remote Hydraulic Control Type, single or dual model, is power controlled from within the cab. Widely used on crash rescue trucks.



The Portable Type goes off the truck and into action in seconds – wherever hose lines can be brought into action.

CIRCLE 101 ON READER CARD

Manual Standardizes Traffic Control Signs

Safety directors responsible for plant parking operations and safe entrance and exit controls for vehicles will be interested in the recently revised *Manual on Uniform Traffic Control Devices for Streets and Highways.*

The Bureau of Public Roads has announced that only such devices as conform with the new manual will be approved for federal-aid highway systems.

"Any plans for erecting warning, regulatory or informational signs on plant property should be planned to conform in size and shape with standards set forth in the new manual," commented Harry Porter Jr., director of NSC's Traffic Department and a long-time member of the National Joint Committee which drafted the guide.

"Safety directors should encourage plant management or those responsible to bring signs in plant areas into conformity with the new standards," he said.

The new standards, updated from 1948, eliminate many of the alternatives in traffic control devices that previously were permitted, substituting a single standard. A notable example of this is pedestrian signals. The manual provides these shall be rectangular in shape and that the messages they carry shall be limited to WALK and DON'T WALK.

Copies of the book will be available to public officials, motorists and other interested persons from the Superintendent of Documents, Government Printing Office, Washington 25, D.C.

"But officer, that's the first pair of shoes I bought for my baby."

Contaminants

— *From page 27*

and sometimes because of inadequate air velocities, will become restricted due to a build-up of materials in the duct. This may be particularly true at the elbows. (Figure 10.)

An enterprising engineer solved this by cutting slots in the elbow. The air coming in the slots provided an air stream which cushioned and directed the particles from the buffing operation away from the elbow wall and into the main air stream. Figure 10 shows the action of the particles before and after the slots were cut.

Periodic maintenance checks are necessary on the motor and fan in a ventilation system used to control toxic materials. The plant engineer may make these checks, or he may have one of his staff perform them, depending on the size of the organization.

Occasionally, after one of these checks has been made or if some maintenance work has been performed, you find the motor leads have been reversed. This reverses the fan and you suddenly have a system no longer working effectively due to greatly diminished air volume and velocities.

Periodic maintenance checks on ventilation ducts are also necessary to make sure air volume and velocities have not been decreased due to dust clogging, closed dampers or blast gates.

As plants expand or change operations, ventilation requirements may increase. When this happens, ventilation controls which were once effective may no longer be as effective because there may not be enough air left in the plant to satisfy new ventilation requirements.

Fans actually work against a partial vacuum. One plant faced with this situation wished to install a fan having more exhaust capacity to regain the control it had had in the plating line before the new polishing department started operating.

A discussion with plant management on the importance of supplying enough make-up air to replace air being exhausted caused management to reverse its thinking. It installed make-up air units.

By doing this, management re-

gained control and reduced maintenance on the plant heating equipment, since employees were not continuously relighting furnaces, nor were complaints about fuel combustion odors being received.

There are a number of operations involving heat radiation, cold rooms, radioisotopes, laboratories, noise and other activities requiring industrial hygiene and control. The subject of personal protective equipment also has been avoided since personal protective equipment, while necessary in many instances, should not be substituted where engineered controls will do the job.

The safety director or engineer – because he hears employees' gripes (real or imaginary), maintains loss records, and is in all plant areas frequently – can and should play an important role in spotting new health hazards.

He can and should play an important role in spotting inadequacies in presently installed health hazard control systems, whether these inadequacies are due to new materials, maintenance, system overloading, or design.

Establishment of a health hazards control committee will assist in the recognition and control of new toxic materials or processes before they become problems.

The safety engineer, because of his knowledge of his plant, can frequently sense or see those changes indicating health hazard controls should be initiated or existing control measures should be improved or control systems are being used as specified.

REFERENCES

1. *Industrial Ventilation Manual*, American Conference of Governmental Industrial Hygienists—1960 Edition, P. O. Box 453, Lansing, Mich.

2. *Air Conditioning Heating and Ventilating Magazine*, Oct. 60, Vol. 57, No. 10, P. 75.

"Got an old respirator that my wife could wear for peeling onions?"

The President's Medal

Awards made by the National Safety Council for successful application of artificial respiration

ANDRE ST-ONGE, electrician, Aluminum Company of America. Shawinigan, Quebec, Ca. – resuscitation after electric shock.

WILLIAM E. HOLLISTER, line foreman, Department of Water and Power, Los Angeles, Calif. – drowning.

HUGH J. WILLCOCKSON, serviceman, New York State Electric and Gas Corp., Newark, N.J. – resuscitation after asphyxiation.

REGINALD B. LOVELACE, maintenance supervisor, Ralston Purina Co., New Madrid, Mo. – resuscitation after asphyxiation.

CHESTER F. DROWN, power lineman, Cincinnati Gas and Electric Co., Cincinnati, Ohio – resuscitation after gas asphyxiation.

JOHN C. HARFFMAN, truck driver, Cincinnati Gas and Electric Co., Cincinnati, Ohio – resuscitation after gas asphyxiation.

PHILLIP MCCULLY, storekeeper, McCleary, Washington – resuscitation after drowning.

MORELY JACOBS, painter, Midale, Saskatchewan, Canada – resuscitation after electric shock.

MRS. F. M. KELLOW, housewife, Rock Springs, Wyo. – resuscitation after drowning.

LEWIS DAY, forest worker, Altoona, Fla. – resuscitation after accidental choking.

LEROY KIESER JR., foreman, Trans World Airlines, Jamaica, N.Y. – resuscitation after gas asphyxiation.

JACK D. BAUGHN JR., station installer, Pacific Telephone Co., Seattle, Wash. – resuscitation after gas asphyxiation.

Coming Events

in safety and related fields

May 1-3, Syracuse, N.Y.
Seventh Central New York Safety Conference and Exposition (Hotel Syracuse). Newell C. Townsend, manager, Greater Syracuse Safety Council, Syracuse Chamber of Commerce, 351 S. Warren St., Syracuse 2.

May 2-4, Carbondale, Ill.
Industrial Safety Conference, cosponsored by the St. Louis Chapter of the ASSE and Southern Illinois University. Dr. Ralph Gallington, chairman, Industrial Education Dept., Carbondale, Ill.

May 2-4, Columbus, Ohio.
Thirty-first All-Ohio Safety Congress and Exhibit (Deshler-Hilton Hotel and Neil House). Arthur W. Moon, Congress manager, Div. of Safety and Hygiene, 400 S. Front St., Columbus 15.

May 4-5, Kansas City, Mo.
Central States Safety Congress (Municipal Auditorium). Thomas Dahl, exec. dir., Kansas City Area Safety Council, City Hall, Kansas City, Mo.

May 4-6, Norfolk, Va.
Twenty-seventh Annual Conference, Virginia Safety Association (Hotel Monticello). Hiram M. Smith Jr., Virginia Safety Association, 810 Mutual Bldg., Ninth and Main Sts., Richmond 19, Va.

May 8-9, Chicago.
Regional Conference on Off-the-Job Safety (Congress Hotel). Sponsored by the National Safety Council. Paul Sheppard, NSC, 425 N. Michigan Ave., Chicago 11.

May 8-10, Bethlehem, Pa.
Thirty-fourth Annual Eastern

Pennsylvania Safety Conference (Hotel Bethlehem). Harold A. Seward, secretary-treasurer, Lehigh Valley Safety Council, 602 E. Third St., Bethlehem.

May 8-12, San Francisco.
American Foundrymen's Society Castings Congress and Exposition. Denham and Co., 925 Book Bldg., Detroit 26, Mich.

May 9-11, Niagara Falls, N.Y.
Twenty-first Western New York Safety Conference (Hotel Niagara). P.O. Box 315, Niagara Falls.

May 10-12, Durham, N.C.
Thirty-first Annual North Carolina Statewide Industrial Safety Conference (Jack Tar Durham Hotel). H. S. Baucom, N. C. Industrial Commission, Raleigh, N.C.

May 16-17, Oklahoma City, Okla.
Thirteenth Annual Oklahoma Safety Conference (Skirvin Hotel). Bob Eastman, manager, Oklahoma Safety Council, 1600 N.W. 23rd St., Oklahoma City.

May 17-19, Toronto, Ont., Canada.
Annual meeting of Mines Accident Prevention Association (Royal York Hotel). C. S. Gibson, 1399 Hammond St., North Bay, Ont.

May 18, Green Bay, Wis.
Thirty-third Fox River Valley and Lake Shore Regional Safety Conference, J. A. Long, Bay West Paper Co., Green Bay.

May 22-25, Detroit.
Design Engineering Show (Cobo Hall). Clapp & Poliak, Inc., 341 Madison, New York 17.

May 24-26, Groton, Conn.
Annual Conference of Administrative Engineers. Association of Casualty and Surety Companies, 60 John St., New York 38.

May 25-26, Duluth, Minn.
Thirty-seventh Annual Conference of Lake Superior Mines Safety Council (Hotel Duluth). Allen D. Look, secretary, 321 Federal Bldg., Duluth 2.

June 5-23, Cincinnati, Ohio.
Courses in Industrial Hygiene Engineering and Industrial Hygiene Chemistry. Chief, Training Operations Section, Occupational Health Research and Training Facility, 1014 Broadway, Cincinnati 2.

June 12-16, Battle Creek, Mich.
Second of four identical Staff Col-

lege Courses in Industry Defense. Office of Civil and Defense Mobilization, Battle Creek, Mich. Third course: Sept. 25-29. Fourth course: Nov. 13-17.

June 13-14, Montreal, Que., Canada.
Executive Committee Meeting, National Safety Council's Public Utilities Section (Laurentien Hotel). R. E. McEldowney Jr., safety director, United Fuel Gas Co., P.O. Box 1275, Charleston, W. Va.

June 13-14, Hartford, Conn.
Connecticut Safety Conference (Hotel Statler). Charles Wooding, conference chairman, Wallingford Steel Co., Wallingford, Conn.

June 15-17, Carbondale, Ill.
Eighth Annual Conference of Campus Safety Association. James A. Aaron, program chairman, Safety Education Center, Southern Illinois University, Carbondale.

June 19-23, Boston.
Courses on air cleaning, Harvard University School of Public Health. Leslie Silverman, Sc.D., Harvard School of Public Health, 55 Shattuck St., Boston 15.

Aug. 13-17, Detroit.
1961 Meeting of American Trucking Associations' Council of Safety Supervisors (Hotel Fort Shelby). Bernard Goodrich, A.T.A., 1424 16th St. N.W., Washington 6, D.C.

Aug. 31-Sept. 1, Poland Spring, Me.
Thirty-fourth Annual Maine State Safety Conference (Poland Spring House). Arthur F. Minchin, secretary, Department of Labor and Industry, State House, Augusta, Maine.

Sept. 25-28, New York City.
1961 Industrial Building Exposition (New York Coliseum). Ed Greif, Banner and Greif, 369 Lexington Ave., New York 17.

Sept. 26-27, Harrisburg, Pa.
Annual Occupational Safety Conference, Pennsylvania Department of Labor and Industry. Frank K. Boal, deputy secretary, Dept. of Labor and Industry, Harrisburg.

Oct. 16-20, Chicago.
Forty-ninth National Safety Congress and Exposition (Conrad-Hilton Hotel). R. L. Forney, secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11.

Automation

— From page 31

or stoppage occurs in pipes carrying acids and caustics, it is located with radioactive tracers. This eliminates the relatively hazardous operation of breaking joints to locate the trouble. Whether that can be called automation or not, it certainly is in line with some of the modern practices that we think of in connection with automation.

Does all this mean that the millennium has come and that safety also has become automatic? Unfortunately not. Even in automated plants, we still have people working, and wherever we have people working, we have the possibility of injuries. People can still fall down stairs and slip on floors and get caught in machines, even the automated kind.

What does automation mean to the safety engineer? Does he have to do a different kind of accident prevention work than he used to do? Or does he do more of the same? Let's take first some of the things a safety engineer has always been supposed to do. We are supposed to recognize and check for the sort of hazards that are known to cause accidents. Such things as protruding set screws on revolving parts, sharp corners to bump into, ladders and stairways to reach high points, pinch points on conveyors, power trucks, slippery floors, and all the rest.

Any safety engineer who has been through the experience of change-overs and new installations must realize that the new installations that come with automatic equipment are no different than they always were. We have to watch for pipes and lines that run across the floor. We have to watch for places where people are not supposed to go.

True, safety is achieved by getting men away from the point of operation on many machines. It is a mistake, however, to think that because no operator is required, guarding is unnecessary. Some of the most terrible and gruesome accidents have occurred at places which were unguarded because "nobody ever goes there." Somebody does go there, usually alone when there is no chance of discovery or rescue if he gets caught in a moving part.

One very important hazard that

exists in automated operations which does not exist in old-fashioned single machine operations is that of lines being shut down and then started up while somebody is working on them or is in a position where he can be caught. It is the safety man's job to make sure that controls are installed making it impossible for any line of equipment to start without the absolute assurance that everybody is in the clear. He needs to be firm about this. The rules and regulations and the accident records are all on his side. Not only starting but stopping also ought to be safeguarded. Stop buttons should be placed at locations where they can be conveniently reached from any part of the operation.

We have learned this at earlier stages in the mechanization process. Too many men have been caught in conveyors and have lost arms in processing machines and been wrapped around shafts because somebody on another floor or in another location was able to start the equipment without being sure that everybody was clear.

In all automated and highly mechanized plants more maintenance men are needed. We mentioned the jobs which caused accidents that we have eliminated, such as handling material and feeding machines. One job on which hazards are increasing is maintenance work.

We run into a special hazard here because of the perfectly commendable wish of employers to retrain and keep on the payroll men who are laid off by automated processes. We take a man who has been an operator and make him a millwright or a maintenance man in order to give him work. This is fine, but we must be sure that he is given adequate training, that he is temperamentally fitted to do the job of maintenance work and that he has adequate supervision, particularly during the training period.

Comment has been made about the psychological effects of automation. There has been speculation along the following lines:

1. *Working alone will depress people, possibly make them "stir crazy."* Some people have quit jobs for this reason, not only automated jobs but jobs of many kinds.

I have talked with men on what seemed like some particularly lonely jobs monitoring automated apparatus and they don't seem unhappy about it. One man said, "I get a chance to walk over to another location now and then and the other men on similar jobs stop in to see me. The foreman gets around frequently. They let me do a little sweeping and general housekeeping in my area. And then the work is fairly demanding. I don't just sit here and watch a single dial all the time. And I study and try to figure out the meaning of all the things I do. It might lead to a better job."

2. *The monotony of the work would be deadly.* I have seen some jobs in automated plants that appear to be monotonous. I don't think I have seen any that look as monotonous and deadly as feeding pieces into a punch press, or a rip saw or planer. Some people won't work on jobs like that any longer than they have to.

3. *Men will be overcome by the strain of the responsibility of tending apparatus that can do so much damage if they make a mistake.* We have seen some cases like this. Some men refuse such jobs, others quit, and some try to stick it out but get sick.

Often better training, retraining and coaching from the supervisor will help them. Sometimes they can't make it and have to find a less exciting job.

4. *Some men are overcome by the urgency that results from a machine's setting the pace and the feeling that nothing must stop it.* A number of cases are recorded of men exposing themselves to danger to avoid any interruption of the flow of work. That is a real problem and one that safety engineers and management people must grapple with.

First, management has to decide definitely whether or not men are expected to work on moving equipment, what they are expected to do and what they must not do. This decision should not be left to the men. Engineers must try to make it unnecessary for men to expose themselves. And supervisors must be thorough in their instruction and firm in their supervision to prevent men from doing dangerous things in an effort to keep the machinery moving.

5. *Men become bored and do dangerous things to provide a little interest and excitement.* Men operating machines often shift around to do right-hand jobs with the left hand or with a foot. Men throw things instead of passing them.

Safety men need to do all the things that they were ever expected to do, but do them better. Here are

the answers given by a top-flight safety engineer in a company that has automated operations.

1. Better staff relations between the safety man and other people in the management team are needed. Since new hazards are being created, it is not enough for the safety engineer to wait until a series of accidents has occurred in order to do something about it. He should be in on the planning.

2. The safety man should have better knowledge of the mechanical aspects of his job. It goes without saying that as the plants become more mechanized, the knowledge of the safety engineer needs to be more mechanized. Does this mean that he has to be a graduate engineer? Certainly not. In most cases, if he stays close to the operations and maintains his relations with the various technical people in the organization, he can learn what he needs to know about the mechanical hazards of the job.

3. Better inspection is needed. Certainly, with new equipment coming in, we can't afford to take for granted that everything is safe at the time it is installed. As changes in equipment are made, we must be particularly alert to see that new hazards are not introduced.

4. Better safety training is needed, particularly of maintenance people.

5. Better supervisory training is required because automated operations require a better grade of supervision than when every supervisor had all his men doing operations in one room close to him.

6. Points where man failure can cause serious property damage or injury should be recognized and given special attention.

The formula for safety is still: Eliminate the hazard, guard the operation, train the worker.

"Tighten it! It wears out my pants!"

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— *From page 22*

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THE ACCIDENT BAROMETER

Prepared by the Statistics Division
National Safety Council

THE NATIONAL ACCIDENT FATALITY TOLL

	January 1961	January 1960	Change
Total	7,100	7,600	— 7%
Motor-Vehicle	2,650	2,880	— 8%
Public (except M.V.)	900	1,150	— 22%
Home	2,600	2,700	— 4%
Work	1,200	1,100	+ 9%

WORK INJURIES

17 NATIONAL SAFETY COUNCIL CONTESTS

Disabling Injury Frequency Rates

	1961	1960	Change
January	6.05	6.07	0%

MOTOR VEHICLE DEATHS

JANUARY 1961

Number of Reporting States	CHANGES IN DEATHS	Number of Reporting Cities Over 10,000 Pop.
17	UP from 1960	124
1	SAME as 1960	492
28	DOWN from 1960	131

GREATEST PER CENT REDUCTION IN DEATHS

States		Cities Over 200,000 Pop.	
Vermont	— 88%	Buffalo, N.Y.	— 100%
Delaware	— 70%	Columbus, Ohio	— 100%
New Hampshire	— 50%	Providence, R.I.	— 100%
New Mexico	— 44%	Charlotte, N.C.	— 100%

HOME AND PUBLIC DEATHS

JANUARY 1961

HOME DEATHS

UP from 1960:
Poisonings
Firearms
Fires, burns

DOWN from 1960:
Poison gas
Falls
Suffocation

AGE GROUPS Change from 1960

Home		Public
Down	0- 4	....
Down	5-14	Down
Up	15-24	Down
Up	25-44	Down
Up	45-64	Down
Down	65-74	Down
Down	75 & Over	Down

PUBLIC DEATHS

UP from 1960:
Fires, burns
Firearms

DOWN from 1960:
Transportation
Drownings
Falls

KEEPING

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Watch this space each month for late news on NSC services. Use the handy Order Form to request sample copies of publications listed in this issue, or to order safety wallchecks.

MAY 1961

NEW THIS MONTH . . .

- 1961 SAFETY CATALOG
- A LEAFLET ON TRAFFIC SAFETY FOR SUMMER HOLIDAYS
- TWO LEAFLETS WITH SAFETY HINTS FOR THE ELDERLY

1961 SAFETY CATALOG of occupational safety materials

The 1961 edition of the National Safety Council Catalog of Occupational Safety is a compilation of safety materials available from the Council for plant safety programs, motor fleet safety programs, and off-job safety programs. Colorfully illustrated, its 72 pages are filled with hundreds of technical bulletins, training aids, leaflets, films and a wide variety of other materials. It is now being mailed to all members of the National Safety Council. Non-members can obtain a copy on written request to the Council.

HOLIDAYS ARE DANGER DAYS

A colorfully illustrated leaflet that presents important facts on holiday driving accidents. Each fact is followed by a relevant tip to help drivers observe safer and saner holidays. This is just the right kind of leaflet to distribute with pay envelopes before Memorial Day and other summer holidays. 4¼" x 3⅝"

399.44 (Sold in pkgs. of 100.) Price per pkg.: 1—$2.50; 10—$2.00; 50—$1.80; 100—$1.60; 200—$1.50; 1000—$1.45.

SAFETY HINTS FOR THE ELDERLY

Two new leaflets that present friendly words of caution and advice for the elderly. They cover the subjects of driving and walking, suggesting personal practices that help to prevent accidents. Each leaflet has four pages and is illustrated in full color. 3½" x 8".

599.15 Doubtful about Driving?
599.16 Worried about Walking?

Prices: (Minimum order 50.) Each: 50—$.03; 500—$.025; 1000—$.023; 5000—$.021; 10,000—$.02.

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July, 1961

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July, 1961

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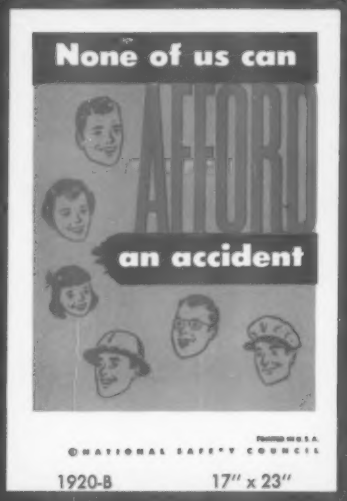

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2078-B 17" x 23"

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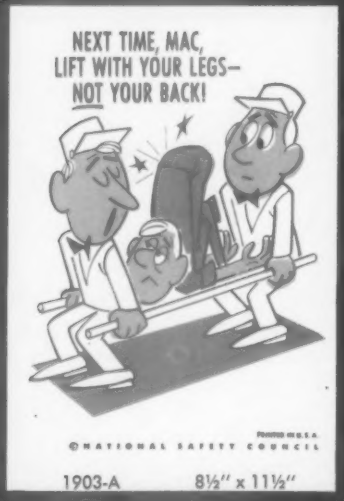

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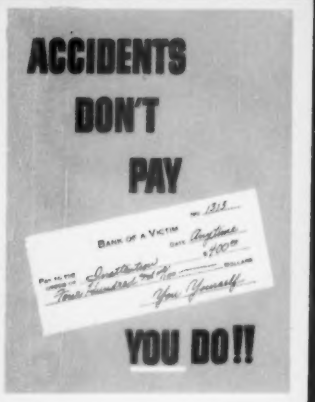

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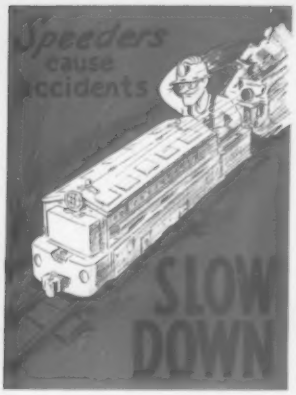

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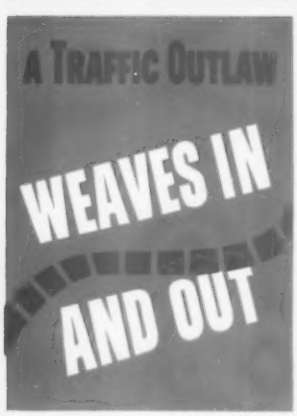

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ents important facts on holiday driving accidents and ities with pertinent tips to highway travelers on how to e trips safer for themselves and their fellow drivers. Book- ze 4¼" x 3⅝".

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	192.44	Safety is a family effort
	192.45	Vacation with safety
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Wire

— *From page 23*

Atomic Energy proposed the creation of an Atomic Safety and Licensing Board within the AEC. Members of the proposed committee would be presidential appointees, two of whom would be scientists or safety engineers.

The AEC issued the approved criteria under which the states may assume regulatory control of certain radioactive material such as radioisotopes, source materials (uranium and thorium), and small quantities of special nuclear material of less than a critical mass.

Negotiations will have to be undertaken with each state to reach satisfactory agreements under enabling federal legislation. The AEC must make a finding that the state program is compatible with the AEC's program and that it is adequate to protect public health and safety.

A rule-making proceeding was announced, whereby the AEC proposes to extend the financial liability and protection requirements of law to licensees entitled to possess and use substantial quantities of certain forms of unirradiated uranium.

Also set were public hearings on a licensee's status for use of radioisotopes for pharmaceutical processing, alleging it appears the licensee's radiation safety conditions constitute a hazard.

Congressman Ashley protested that a serious problem results from the overlapping of functions between the AEC and the U.S. Public Health Service, concerning regulation of ionizing radiation.

As a result of the first fatal nuclear reactor accident in the United States (See "Wire," March 1961), an investigation report by the AFL-CIO has called for a re-examination of safety provisions of the design, construction and location of certain types of reactors.

And the IBEW has charged to the Congress that the explosion "might have been avoided" if proper training and safety programs had been in effect.

The Food and Drug Administration has amended and broadened its regulations relating to sources of radiation which may be used for in-

spection of foods and food packages and for controlling food processes.

The AFL-CIO held its first national institute in safety training, with a week's intensive instruction in safety and occupational health. Teachers were provided by the U.S. Department of Labor's Bureau of Labor Standards.

The institute is designated to train union leaders who will train others. These institutes are to be held four times yearly and offer courses in beginning safety instruction, chemical and environmental training, including radiation safety and mechanical and physical safety.

Traffic Safety. The President told Congress, in submitting a proposed bill to complete the Interstate Highway System by 1972 on a pay-as-you-go basis, that "our people need the safety . . . that this program helps provide."

And in his special message to the Congress on housing and community development, President Kennedy said: "Nothing is more dramatically apparent than the inadequacy of transportation in our larger urban areas. The solution cannot be found only in the construction of additional urban highways – vital as that job is.

"Other means for mass transportation which use less space and equipment must be improved and expanded. Perhaps even more important planning for transportation and land use must go hand in hand as two inseparable aspects of the same process."

As a result, the President ordered the Housing and Home Finance Administrator and the Secretary of Commerce "to undertake an immediate and extensive study of urban transportation problems and the proper role of the federal government in their solution."

The Secretary of Commerce announced formation of a policy-planning group of experts to assist the department in its transportation responsibilities, with the immediate task of undertaking the joint study of urban transportation ordered by the President. This study emphasized three points:

1. "It is obvious that a successful attack on urban transportation problems involves both the development of adequate highways and ur-

ban mass transportation. The two are very closely related."

2. The interrelationship of all aspects of transportation (airports, rail terminals, truck and bus terminals and parking facilities, in addition to highways and transit).

3. Relationship of transportation problems with comprehensive land use plans.

The Senate Housing Committee held hearings on S. 345 (Williams plus 17 senators), a broadened version of S. 3278 passed by the Senate last year (See "Wire," August 1960). The present bill provides for a low-cost revolving loan fund of $250 million for equipment and facilities to improve mass transportation service.

It also provides a matching grant program of $75 million for actual demonstration projects and comprehensive mass transportation planning. More than 20 companion measures have been introduced into the House.

The bill's sponsor said: "We cannot renew our cities by just building new buildings under the urban renewal program. We must also have a mass transportation program, working hand in hand with other urban development programs."

The bill would cover all forms of mass commuter transportation, including rail, bus, highway, and helicopter.

A special report, prepared for the Senate Interstate and Foreign Commerce Committee on commuter transportation in the New Jersey-New York-Connecticut metropolitan region, urged federal low-interest loans and broad federal, state and local tax aid as a means of modernizing commuter railroads.

The report recommended the rail plan should be coordinated with federal airport, highway, housing and urban renewal programs, and with state and local planning for the region.

The Roberts Committee on Health and Safety, in the House, also held important hearings on three bills. The first was H.R. 2446 (Roberts), to provide that hydraulic brake fluid shipped or sold in interstate commerce for motor vehicle use shall meet specifications prescribed by the Secretary of Commerce.

In his opening statement in hearings on this bill, Congressman Rob-

erts noted that less than half the states had legislation regulating such fluid, and commented: "If the states fail to act, the federal government has some responsibility to protect interstate commerce from the hazards resulting from this phantom killer of substandard brake fluid."

The Department of Commerce proposed that this bill be deferred until the President's Commission on Intergovernmental Relations could give consideration to the problems of federal-state relations raised by the bill. Committee members did not agree.

A substitute bill was proposed by the American Trucking Associations, whereby the statute would define hydraulic brake fluid as a substance meeting specified SAE standards, require proper labeling of all fluid containers, and then make it illegal to ship in interstate commerce any brake fluid not so labeled.

The two other bills before committee hearings were: H.R. 903 (Bennett), to require certain safety devices on motor vehicles, and H.R. 1341 (Roberts) to require federal passenger vehicles to meet certain safety standards.

The ATA concurred with the objective of H.R. 1341, but proposed as a substitute an advisory committee on safety equipment to develop recommended procedures to guide federal agencies in procurement of such safety equipment.

The ATA opposed H.R. 903 because it mandated federal standards on motor vehicle design. The Insurance Institute for Highway Safety opposed H.R. 903, especially its provision dealing with speed governors. The Association for the Aid of Crippled Children, the American Federation of Government Employees, and the American Medical Association supported H.R. 1341.

During the hearings, several committee members expressed displeasure with the alleged failure of the Department of Commerce to assume federal leadership in the traffic safety field. Congressman Roberts said perhaps authority should be vested in another agency of government.

Further hearings were scheduled for mid-April to find what govern-

ment agencies are doing in traffic safety and related research activities. The U.S. Public Health Service stated its readiness to undertake "a great deal of this type of research."

Senator Magnuson, chairman of the Senate Committee on Interstate and Foreign Commerce, introduced an administration bill, S. 1440, to amend the driver register bill enacted last year (See "Wire," October 1960) to adjust its terms to the practice of states on license withdrawals, to enable more states to participate in the registry program.

Commercial Transportation. At the request of the ICC, Senator Magnuson also introduced S. 1287, to make it clear that ICC regulations respecting safety of operations of motor vehicles apply to private carriers of property. This bill is deemed necessary because of a recent court decision casting doubt on the ICC's power in this regard.

The ICC said there were more than 75,000 private carriers of property operating over 675,000 vehicles in interstate commerce and "with this number of vehicles on the nation's highways, the incidence of exposure to accidents is very great."

The ICC amended its rules to permit motor carriers to use certain dry-chemical-type fire extinguishers, if of adequate rating by tests.

Aviation Safety. The President established a special task force "to study the problem of safe and efficient use of our airspace." In making the announcement, he said "we must have a well-conceived plan for managing air traffic, now and in the future."

The Federal Aviation Agency announced the number of mid-air collisions involving general aviation aircraft during 1960 was "nearly twice" the number in 1959, and that most collision accidents occurred in the landing pattern or local flying areas of airports.

The report said "adoption of high-speed airplanes" was not a major factor in this accident increase. The FAA called for "the exercise of constant vigilance on the part of all pilots" as the principal solution to the problem.

Safety moves have been undertaken by the FAA as a result of the studies of aircraft accidents. It banned takeoffs in conditions of

poor visibility, and it is studying equipment changes and pressures on air traffic controllers. It also appointed a consultant group to develop the most effective procedural methods for adoption and enforcement of safety rules and regulations.

The FAA proposed amendments to its regulations on the reporting of mechanical failures, changes in its technical standard orders for aircraft tires, and a new plan for its maintenance standards rules to establish minimum standards governing the end product of maintenance instead of prescribing detailed methods, techniques and procedures for accomplishing maintenance.

The FAA announced plans for a series of regional conferences with pilots and plane owners, to seek their views on air safety. The CAB indicated its plans for a new method of accident investigation, using the task-force technique in which all of its investigators are assigned to a single accident to obtain the most expeditious results.

Public Safety. The House approved H.R. 3980, with amendments, as an amendment to the Food Additives Law, to permit until June 30, 1964, the continued use of certain food additives and pesticide chemicals (advancing the cut-off date from March 5, 1961).

The purpose is to enable completion of necessary investigations and scientific studies and to provide final assurance of the safe use of such additives and chemicals. The Secretary of Health, Education and Welfare must make a finding under the bill that such action would involve no undue risk to the public health and that conditions exist which necessitate such extension of time.

The President designated the week of July 2 as National Safe Boating Week. He cautioned that the "increase in recreational boating . . . has intensified the need for close adherence to accepted safe-boating practices to prevent needless loss of life and damage to property."

Farm Safety. The President also designated the week of July 23 as National Farm Safety Week. He called attention to the more than one million farm residents injured and the thousands killed in accidents on farms, and urged all farm residents to remember "safety is a family affair."

NEW SAFETY EQUIPMENT

Products listed in this section have been reviewed by a committee of the Industrial Department of the National Safety Council. Only those which comply with the advertising policy of the National Safety Council are accepted. However, the information is based on literature from the manufacturer, and the Council does not accept responsibility for statements or claims made herein. Nor does the listing of a product in this section imply endorsement by the National Safety Council.

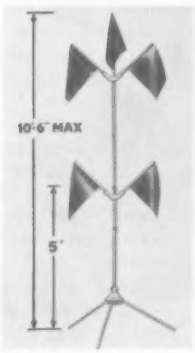
Bump Cap Designed In Plastic

The "Bump Cap" is specially designed for use in areas where there is no hazard of falling objects.

It weighs less than seven ounces, has a two-in. square space for company or other insignia, and is available in white or yellow. Special colors on request.

The plastic cap is suitable for sports use, plant guards, civil defense personnel, and others requiring quick identification. Equipped with removable, adjustable suspension and a chin strap. MINE SAFETY APPLIANCES CO., 201 North Braddock Avenue, Pittsburgh 8, Pa.

(Item 150)



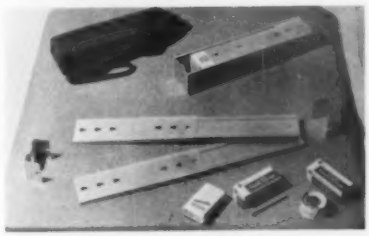
Warning Flag Tripod

Channeling of traffic away from work areas can be gained with this standard warning tripod. The complete unit measures 10 ft. 6 in. high when fully extended and can be closed to 59 in. for easy carrying and storage. The upper column is adjustable to any desired height by means of a knurled locking nut and telescoping column. Tripod legs lock securely in both open and folded positions.

Features include heavy-duty construction using malleable castings, steel and aluminum; a wide assortment of colored flags; and protective yellow industrial finish. Net weight is 25 lbs. STANDARD SIGNS, INC., 3190 East 65th St., Cleveland 27, Ohio.

(Item 151)

First Aid Kit Case Forms Own Splints



The Redi-Splint First Aid Kit, features an aluminum container that converts into a splint set.

When an emergency arises, the kit can be disassembled, first aid supplies deposited in the container bag, and a splint constructed.

In addition to regular splints, traction splints can be made.

Made of extruded aluminum, making it extra strong and light weight, it can be kept clean and sanitary with soap and water.

The kit is available with a full complement of first-aid supplies and is enclosed in an attractive water-repellent canvas container for easy handling and storage. ROCK ROYAL CORP., 120 S. LaSalle St., Chicago 3, Ill.

(Item 152)

Respirator For Radioactive Dusts

A respirator for protection against radioactive dusts, plutonium, beryllium and similar very toxic dusts, mists, fumes, smokes, air-borne bacteria and certain viruses, uses encased R-520 super-filter, permanently sealed in clear plastic case for protection against damage during handling or inserting. Snug seal by contact of plastic case with rubber gasket inside filter holder. Face seal checked by plugging holes in filter with thumbs and inhaling. Breathing resistance of four-pleated filter claimed low.

The 809 respirator has full facepiece of natural rubber, with soft rolled edges, chin cup, pleated nose piece. Exhalation valve at bottom of facepiece protected by metal guard. Two natural rubber inhalation valves inside facepiece admit air during inhalation and become air-tight upon exhalation. Adujstable double elastic headbands. Safety glasses and goggles may be worn.

The RFM-809 has adjustable natural rubber half facepiece. Inhaled air is passed over curved plastic lenses from twin inhalation valves inside facepiece.

The RFMS-809 Scottoramic full facepiece with one piece panoramic vision lens, has shock-resistant safety lens locked in place by stainless steel frame.

WILLSON PRODUCTS DIV., Reading, Pa.

(Item 153)

New Disposable Clothing

ASSOCIATED BAG AND APRON CO., has added disposable clothing to their line of protective clothing.

The material is claimed resistant to most acids and alkalis, dustproof, fire resistant, unaffected by oil or grease, waterproof and lightweight.

The material is non-woven, and can be sewn, glued, dyed and printed.

Available are protective aprons, sleeves, leggings, jackets and long coats. 902 W. Huron Street, Chicago 22, Ill.

(Item 154)

Safety Foot Bath Introduced by Stokes

STOKES MOLDED PRODUCTS, Trenton, New Jersey, has introduced a hard rubber foot bath for commercial and industrial uses such as hotels, motels, schools, industrial labs, pools, clubs, gyms, and industrial employee recreation facilities.

The molded unit has a stippled bottom, no sharp corners or edges, of one piece, corrosion-resistant construction and light in weight. Not affected by chlorine.

(Item 155)

New Primer for Compostion Floors

A new water-emulsion based primer, First Coat can be applied with mops and forms a hard clear film which fills the pores of composition floors. Claimed not to oxidize, yellow, discolor or require removal.

Designed to serve as a barrier between the chemical action of composition floors and the dressings and cleaners used upon them.

Tests on old and new resilient floors in office buildings, plants, schools, hospitals, and institutions indicate the product reduces floor slipperiness. Cleaning difficulty, excess scuffing, powdering of resin dressings, poor gloss, and abbreviated dressing life are claimed minimized.

The product is said to eliminate the need for multiple coats and to enable dressings to last longer, retain a deeper gloss, resist heel marking, and retain less dirt.

Recommended by the maker for asphalt tile, vinyl, vinyl asbestos, linoleum, rubber tile and terrazo.

Regular subsequent cleaning and redressing of floors will not remove the underlying First Coat. It is semi-permanent. It can be removed if necessary, however, with concentrate cleaner solutions and scrubbing pads.

Generally, First Coat is recommended for two types of composition floors: the porous floor on which no dressing can be expected to perform well unless the pores are sealed off; and the problem floor (old or new) where the chemical action of tile interferes with dressing performance. Here, the primer serves as a barrier between tile and dressing.

Applied with a clean string mop. One coat is usually sufficient, but if the floor is exceptionally worn or porous a second coat may be applied after half an hour. Not more than two coats should be used.

MASURY-YOUNG CO., 76 Roland Street, Boston, Mass.

(Item 156)

Extension Ladder Is Portable, Self Contained

The Alco-Lite Rolling Service Ladder is a self-supporting extension ladder unit mounted on a rigid, welded steel frame equipped with 8-in. semi-pneumatic wheels and hand-retractable, swivel type front casters. The large rear wheels move freely over rough floors and allow the unit to be guided easily.

With the ladder in a horizontal position, the overall dimensions of the entire unit are 30 ft x 70 ft.

A cam operated device locks steel rods into the bottom gusset-plate rung

openings to hold the ladder in the upright position. Outriggers, which fold out of the way when not in use, extend to both sides to provide added side stability when needed. Hand rails and a lineman's plastic belt attached to the top of the ladder are added features.

A 24-ft. or 28-ft. Alco-Lite heavy duty all-aluminum or fiberglass extension ladder can be specified on this unit. Both type ladders surpass the requirements of ASA Code A14.2 for portable metal ladders.

Service Ladder can be mounted on a truck. ALUMINUM LADDER CO., Special Ladder Dept., 64 W. Darlington St. Ext., Florence, S.C.

(Item 157)

Portable Resuscitator Is Foot Operated

THE AMERICAN OPTICAL CO., Safety Products Div., is distributing Ambu, a portable rescue breathing kit.

The Ambu kit is designed to open easily. It contains a resuscitator to give air and a foot-operated suction pump to clear the breathing passages fast.

It uses normal atmospheric air and can be operated by one person, without electricity.

The resuscitator bag holds 1,000 cubic centimeters of air and will deliver up to 700 cubic centimeters into the lungs when squeezed. This is usually more than can be delivered by mouth-to-mouth breathing but less than an adult's lungs hold.

(Item 158)

Disposable Wound Swabs

TAILBY-NASON CO., INC., 350 Fifth Ave., New York 1, N.Y., is introducing Betadine Swab Aids, disposable antiseptic applicators for minor wounds, cuts, abrasions, burns, etc.

Betadine Swab Aids are hygienically wrapped in individual cellophane tear-off envelopes – 100 to a strip – packed in a dispenser box designed for easy wall mounting.

Each Swab Aid contains Povidone-Iodine NND, a most effective germicidal iodine complex that does not sting, stain, sensitize or irritate. The color on the wound indicates continued microbicidal activity. Povidone-Iodine can also be safety bandaged.

(Item 159)

Generator Produces "White Noise"

A new Random Noise Generator called the 811B, is said to be a convenient, reliable source of "white noise" for many laboratory applications. It incorporates an internal pink noise filter which gives equal noise power per octave from 20 cps to 100 KC.

This pink noise filter makes the 811B useful for many acoustic and psycho-acoustic measurements. It can also be used for measurements on acoustic materials, rooms and transducers; high intensity noise and vibration testing; balancing paging and music systems; audiometry and masking studies; random stimulation of analog computers; production testing of transducers, filters, loudspeakers and enclosures; and calibration of sound measuring equipment.

Output voltage on the pink noise range is 1.5v RMS and 2:5v on all other ranges. This makes five specific frequency ranges of random noise available.

The 811B covers the frequency spectrum from 2c to more than 1.5mc. Amplitude distribution is Gaussian on all ranges. Overall frequency range is 2 cps to 1.5 MC. A rack-mounted version is available. H. H. SCOTT INC., Instruments Division, Dept. P., 111 Powdermill Road, Maynard, Mass.

(Item 160)

Extension Adapter For Snake Bite Kit

An adapter extension accessory to the MSco Saunders' Snake Bite Kit to aid in applying first aid to any area of the body has been introduced by MEDICAL SUPPLY CO., Rockford, Ill.

The accessory includes a 15-in. flexible, clear, surgical tubing with suction cup and adapter that fits on the standard kit pump.

(Item 161)

Sections Convert Stairs To Ramp

A safety ramp from ORCHARD HILL, INC., Mogadore, Ohio., has been designed to make it possible for only one man to transfer a heavy floor machine up and down stairs. The ramp is also handy for truck loading, or any occasion requiring the movement of floor machines from one level to another.

The ramp is made of aluminum, in lightweight sections. It has built-in safety stops which will hold the machines at any point, preventing loss of control and damage to equipment. Two telescoping sections are adjustable to 15 feet. Extra sections can be added for longer stairs. The sections interlock, will not buckle and have rubber feet at bottom to resist slipping.

(Item 162)

Vacuum Cleaner Can Be Used Three Ways

The "Papoose" 3-way portable vacuum machine may be strapped on the back for use when cleaning overhead pipes and fixtures, or for cleaning in confined areas; used with the one piece wheel attachment for close, easy following when cleaning carpets and floors; or mounted on a wall for use at the work bench or assembly table.

Extremely light weight, the "Papoose" features a 1 H.P. motor, permanent cloth filter bag, one-third bushel capacity, high-impact Royalite housing and dual turbine vacuum system. The unit quickly converts to a powerful blower by exchanging the air intake and exhaust plates.

ADVANCE FLOOR MACHINE CO., Spring Park, Minn.

(Item 163)

7½-v. Emergency Lighting

"Lifesaver," Model No. 2-75 automatic emergency light has been announced by U-C-LITE MANUFACTURING CO., 1050 West Hubbard Street, Chicago 22, Ill.

Designed to plug into any AC outlet and provide automatic emergency lighting whenever regular lighting fails, the unit operates on a standard 7½-v. dry battery. Equipped with two 5-in. lampheads for wide illumination, and with mounting brackets welded to battery container. A built-in voltmeter and momentary contact switch test battery voltage. A neon bulb glows when unit is plugged in for service.

(Item 164)

New Glove Size

The enthusiastic response from industrial users for the V-10 Nimble Fingers gloves has caused the manufacturer, THE PIONEER RUBBER CO., to add an extra-large size to the line of V-10 Nimble Fingers gloves.

These tissue-thin gloves of Pylox, are designed for jobs requiring extreme finger sensitivity and hand dexterity.

The gloves are resistant to acids, alkalis, oils, greases and some solvents, usually encountered in light hand work. The Pioneer Rubber Co., 296 Tiffin Road, Willard, Ohio.

(Item 165)

General Purpose Safety Spectacles Introduced

Air Reduction Sales Co. has introduced a new line of general purpose safety spectacles designed to combine comfort with durability.

Airco plano-type spectacles come in three models: Airco 60, without sideshields; Airco 61, with partial sideshields; and Airco 62, with full sideshields. Hardened lenses provide impact protection.

Another feature is the "universal" bridge, designed to fit for 90 per cent of users without any special fittings or adjustments.

Air Reduction Sales Co., a division of AIR REDUCTION CO., INC., 150 East 42nd St., New York 17, N.Y.

(Item 166)

Plastic Car Boy I.C.C. Approved

An all-plastic carboy that needs no overpack is made by PLASTINEERS, INC., 2127 E. Lake St., Minneapolis 7, Minn.

The 15-gal. capacity carboy has I.C.C. authorization to ship regulated chemicals without overpack.

Made from a copolymer of polyethylene, the carboy is injection-molded in two parts, then welded together by a patented process.

Made in the shape of a drum, the carboy can be rolled and stacked. Outside dimensions are 17¼-in. diameter and 20½-in. length. Empty weight is 17 lbs.

The model is designed to allow use of a standard polyethylene chemical pump. With the pump installed chemicals may be dispensed without the usual dangers of spillage.

The unit has passed all required tests of the Bureau of Explosives Association of American Railroads and The Manufacturing Chemists Association. Each unit is individually air-tested under water before shipment.

(Item 167)

Face Shield For Use With Helmet

GENERAL SCIENTIFIC EQUIPMENT Co. has introduced a face shield designed to protect eyes, face and under-chin area. It is said to be particularly adapted to operations where splashing is a problem.

Worn with a safety helmet, the shield provides wide vision and audibility. Named the Mark I, the head gear fits all safety helmets, and is 16-in. x 9-in., with .040-in. thick visor for impact resistance. Other sizes can be made for special applications.

Request bulletin No. 17, Limekiln Pike and Williams Ave., Philadelphia 50, Pa.

(Item 168)

Underwater Rescue Lung Converts For Atmosphere

Dual service possibilities (underwater and in atmosphere) are available with the PRO "Rescue Lung" announced by ROSE AVIATION, INC., PRO-Lung Division, Aurora, Ohio.

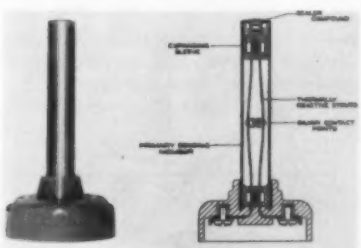
Primarily an underwater (scuba) unit, added optional full-face mask and self-contained regulator converts the apparatus for intolerable atmospheres (smoke, fumes, dust, sprays, etc.).

Kit for underwater use only, includes a pressure-equalizer mouthpiece regulator, single hose and cylinder pressure regulator, and a 38 cu. ft air cylinder (30 minutes' supply at surface) mounted on backplate with harness and quick-release buckle. All packed in carrying case with handle.

Convertible kit includes in addition full-face mask and self-contained pressure-equalizer mouth-piece-regulator, and two wrenches for loosening and tightening fitting to interchange regulator units. All components are corrosion-resistant.

(Item 169)

Thermostat for Fire Protection



The Thermotec Model 302 thermostat can be used as a replacement element in present fire protection systems, or as an element around which new installations may be designed. The unit is designed to be relatively unaffected by moisture, dust, vibration and even paint build-up.

For copies of Underwriters Laboratory report and other descriptive material, write TOMORROW, INC., 7 W. Jackson St., Hayward, Calif.

(Item 170)

Drench Shower And Eye Wash Fountain

A safety shower with ratchet-type valve operation has been combined with a cast-aluminum emergency eye-wash fountain by the HAWS DRINKING FAUCET CO., Berkeley, Calif.

Model 8359 combines emergency body-drench and eye-wash facilities in a single, simplified unit. Furnished complete, as illustrated, ready for installation.

The ratchet-type quick-opening ball valve on the drench shower is operated by a convenient nylon pull rope. A flood of water is released from the satin-chrome finish, 10-in. diameter, cast brass shower head. The valve stays open until the ratchet valve rope is pulled again.

The eye-wash unit polished, cast aluminum. Two chrome-plated brass fountain heads at each side are angled so that a controlled stream of water flushes the patient's eyes. The "push-to-operate' ball valve remains open until manually closed.

(Item 171)

Unit Supplies Emergency Power

A portable emergency 12-volt D.C. generator featuring 420 watt intermittent and 350 watt continuous output is available from the FERRET ENGINEERING CO., 2730 Hylane Rd., Birmingham, Mich.

The unit is designed for use as emergency lighting power, and for emergency starting of cars by battery regeneration. Uses also include auxiliary power for marine and construction operations.

The unit measures 16 in. x 16 in. x 18½-in. high., and weighs 32 lbs. The air cooled 2½ HP gasoline engine has 2-cycle operation. Consumption is said to be 3/10 gal. per hour. Starting is by recoil pull cord. The unit is equipped with a continuous duty alternator of slip ring construction.

(Item 172)

Hand Lamp Has Rechargeable Battery

Approval has been granted by the U.S. Bureau of Mines for a new permissible hand-lamp with a rechargeable 20 amp.-hour battery. The battery has corrosion-resistant terminals and automatic filling control. Designated as Type PBF-5R, the unit is made by CARPENTER MFG. CO., Somerville, Mass.

The manufacturer states that, under normal use, the battery should last three years with reasonable attention.

The PBF-5R and its dry battery equivalent, the PBF-5, have lamp shell and handle spun from a single piece of aluminum. The battery case and cover are of cast aluminum. The reflector can be supplied as either a 'hot-spot' or semi-flood.

(Item 173)

PRODUCT LITERATURE

Available free from manufacturers, literature describing their safety products, and offering useful information on the care and use of safety products. To obtain, circle appropriate numbers on Reader Card.

Lightweight Bump Cap

Literature is available describing the MSA bump cap, headwear for use where there is no hazard of falling objects. Made of lightweight, resilient, chemically-resistant plastic. Suitable for sports use, plant guards, civil defense personnel, and others needing quick identification. The cap features removable, adjustable suspension and chin strap. Weighs less than seven ounces.

For more details circle No. 200 on enclosed return postal card.

Miniature Voice Amplifier

Designed for use in gas masks and other breathing apparatus, this device is said to restore the voice of a person wearing a gas mask to its normal volume and intelligibility. The unit, called the Chemprint Mark III miniature voice amplifier, has already been used successfully by the Navy and is standard equipment on its Polaris Missile submarines. Designed to fit any standard respiratory mask, it also has civilian uses in areas such as fire fighting, civil defense, police and rescue work, and the mining industry. Chemprint Corp., Menlo Park, Calif.

For more details circle No. 201 on enclosed return postal card.

Emergency Lighting

An 8-page catalog covering emergency lighting equipment is available from Electric Cord Co., 432 Plane St., Newark, N.J. Operating data and prices on their line of automatic, battery-operated emergency lighting fixtures. Designed to operate instantly in the event of electric power failure, these emergency lights are fully guaranteed for five years with battery guarantees up to fifteen years.

For more details circle No. 202 on enclosed return postal card.

Neoprene Work Suit

Featured in this data sheet is a yellow nylon neoprene work suit that weighs half as much as conventional suits, yet is said to be four times stronger. Released by B. F. Goodrich Industrial Products Co., Akron, Ohio, this data sheet also illustrates and describes Koroseal and rubber work suits, industrial raincoats, the Hycar storm suit, Koroseal police raincoat and fleece-lined fire coat.

For more details circle No. 203 on enclosed return postal card.

Hand Cleansers

Peck's Products Co., 610 E. Clarence, St. Louis 15, Mo., has literature available on both their soluble and non-soluble hand cleaners. Given are the contents of Peck's various types of hand cleansers plus their recommended use. Featured are Pepco 415, and Pepco 412 which contains an antiseptic ingredient "Actamer." Manufactured by Monsanto Chemical Co., it is said to reduce skin bacteria as much as 97 per cent after repeated hand washings. An invisible film is left on the skin which is said to inhibit future growth of bacteria.

For more details circle No. 204 on enclosed return postal card.

First Aid Kits

Literature is available describing industrial first aid kits sold by American Optical Co.'s Safety Products Div. Made of 20-gauge steel, the kits have reinforced electrically-welded joints to afford contents maximum protection. A rubber gasket keeps out moisture and water. Wall brackets, carrying handles and snap locks are built into each case. Among items in the kits are compresses, bandages, iodine swabs, tourniquets, inhalants and burn salves.

For more details circle No. 205 on enclosed return postal card.

Welding Accessories

A sixteen page catalog describing welding accessories and safety equipment is being offered by Jackson Products, Air Reduction Sales Co., Warren, Mich. Arc welding electrode holders, ground clamps, cable connectors, etc., and head and face protection devices such as safety hats and caps, welding helmets, goggles, and face shields are pictured and described.

For more details circle No. 206 on enclosed return postal card.

Condulets for Hazardous Locations

Bulletin 2722, a 60-page publication detailing the applications of condulets in hazardous locations, is available from Crouse-Hinds Co., Syracuse 1, N.Y. Articles 500-503 and 510-517 from the National Electrical Code are quoted, along with Crouse-Hinds recommendations for condulets meeting the various code requirements. More than 300 product photos, installation photographs, and drawings illustrate this bulletin.

For more details circle No. 207 on enclosed return postal card.

Slip Resistant Flooring

Bulletin AL-S1, available from Alan Wood Steel Co., Conshohocken, Pa., describes rolled steel floor plate produced with an abrasive embedded to a controlled depth. Becoming an integral part of a tough steel plate, the abrasive helps to prevent accidents by providing slip-resistant footing.

For more details circle No. 208 on enclosed return postal card.

Hearing Conservation

Literature is available describing R.A. No. 100 Sound Analyzer. A combination sound level meter and analyzer which furnishes accurate sound level measurements and octave analysis. An important part of any hearing conservation program. Industrial Acoustics Co., Inc., 341 Jackson Avenue, New York 54, N.Y.

For more details circle No. 209 on enclosed return postal card.

Safe Storage of Flammables

Available from the Protectoseal Co., 1928 South Western Avenue, Chicago, Ill. is their Red Book catalog describing equipment for the safe storage, handling and use of flammables. Included are liquid disposal cans, oily waste cans, plunger cans, wash tanks, and various sized storage cans. Also listed are drum vents, pumps and faucets.

For more details circle No. 210 on enclosed return postal card.

Carbon Monoxide Indicator

Leaflet 890A gives complete particulars on the "Monoxor" manufactured by the Bacharach Industrial Instrument Co., 200 N. Braddock Ave., Pittsburgh 8, Pa. This instrument indicates carbon monoxide percentage in the air sample by measurement of color-stain. Advantages are that it requires no color matching and is not affected by presence of other gases normally encountered in safety testing.

For more details circle No. 211 on enclosed return postal card.

Safety Signs

A 64-page, full-color catalog lists hundreds of different stock-worded accident-prevention signs available for prompt shipment, plus information about custom-printed signs to meet your specifications. Stonehouse Signs, Inc., 9th and Larimer Street, Denver 4, Colo.

For more details circle No. 212 on enclosed return postal card.

Incentive Awards

Catalog describing a complete line of plaques, trophies, emblems, and incentive awards is available from Williams Jewelry and Mfg. Co., 10 South Wabash Ave., Chicago 3, Ill.

For more details circle No. 213 on enclosed return postal card.

Portable Megaphone

A color brochure and price list describing "TP" Audio Hailer. A compact, lightweight, one-piece, transistor-powered megaphone. Said to project your words to anyone within a half-mile radius. Self-contained and weighing only 5¾ lbs., it runs on standard flashlight cells. Audio Equipment Co., Inc., Port Washington 31, N.Y.

For more details circle No. 214 on enclosed return postal card.

Safety Binder

Available from Advance Glove Mfg. Co., 901 West LaFayette Blvd., Detroit 26, Michigan. Hundreds of useful safety items and information. Among the items described are welders gloves, asbestos clothing, aluminized clothing, terri-cord, rubber gloves, hand pads, arm guards, work suits, aprons-boots, first aid items, chemical charts, and many other items.

For more details circle No. 215 on enclosed return postal card.

Safety Straps and Belts

Literature is available giving information on Miller Equipment Co.'s line of nylon safety straps and lineman's body belts. Designed, engineered, and tested for safety, comfort, and maximum wear. For higher visibility both day and night these belts are available in attractive yellow. Miller Equipment Co., Franklin, Pa.

For more details circle No. 216 on enclosed return postal card.

Better Vision Products

The Wilkins Co., Inc. Cortland 1, N.Y. has literature describing their line of better vision products. Included are Lens Cleaning Cabinets, Lens Cleaners, Lens Tissue, Anti-Fogging Stations, Anti-Fogging Liquid. Free samples on request.

For more details circle No. 217 on enclosed return postal card.

NEWS ITEMS

New personnel, new plants and facilities, other newsworthy events in the safety product manufacturing and merchandising fields.

Griswold Heads Shoe Co.

FRANK GRISWOLD, formerly vice president and general manager of Lehigh Safety Shoe Co., Allentown, Pa., announces acquisition of the former Safety First Shoe Co., Inc., at Holliston, Mass., now to be known as SAFETY FIRST SHOES, INC.

Reorganization of office staff and sales force have been completed and the firm has started production in cooperation with a large shoe producer.

The new firm will warehouse regionally for fast service to industry, at Holliston, Baltimore and Chicago.

Macwhyte Appoints Chicago District Sales Manager

WILLIAM J. ANDERSON has been appointed Chicago district sales manager for all products of Macwhyte Wire Rope Co.

Anderson will headquarter at the company's Chicago offices and be responsible for all sales in the Chicago territory.

He was transferred from general sales to replace former manager GEORGE W. DRYSDALE, retired.

Boyd Heads Reorganized Division

RICHARD M. BOYD has been appointed to fill the newly created position of director of traffic and transportation for Pittsburgh Plate Glass Co. The new department will combine the functions and personnel of the predecessor groups, namely, the general traffic department of the paint, glass, merchandising, and fiber glass divisions of which Mr. Boyd was general traffic manager, and the general traffic department of the Columbia-Southern Chemical division of which FRANK G. MOORE, who retired recently after 26 years service, was general traffic manager.

Boyd joined the company in 1949 as traffic manager for the glass division. In 1953 he was appointed general traffic manager for the paint, glass, merchandising and fiber glass divisions.

Blackburn Named Stephenson VP

FREDERICK W. BLACKBURN has been appointed vice president for marketing, Stephenson Corp., Red Bank, N.J.

He served previously in executive sales capacities with the Ortho Pharmaceutical Corp., Institutional Products Corp., Lily Tulip Cup Corp., and the Massengill Pharmaceutical Co.

He is a graduate of the course in sales management and marketing at Rutgers University.

New Line Mgr. at M-S-A

JAMES C. SHEEHAN has been named a product line manager at Mine Safety Appliances Co., Pittsburgh, Pa.

He will coordinate development and sales of the firm's line of gas masks.

Sheehan has been associated with the firm for 11 years as a sales engineer in the Tennessee-Kentucky area of the Atlanta district. He is a member of the American Society of Safety Engineers, and a graduate of Georgia Institute of Technology.

advertisers' index

advertising staff

425 N. Michigan Ave.
Chicago 11, Ill., WHitehall 4-4800

advertising manager:
Fred Lubet

advertising production manager:
John Tribble

advertising sales representatives

Chicago: MacIntyre-Simpson & Woods
75 E. Wacker Drive, CEntral 6-1715

New York: MacIntyre-Simpson & Woods
101 Park Ave., LExington 2-0020

San Francisco: Duncan A. Scott & Co.
85 Post St., GArfield 1-7950

Los Angeles: Duncan A. Scott & Co.
1901 W. 8th St., DUnkirk 8-4151

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National SAFETY NEWS

Reader Service

Send now for free literature about the safety products and services in this issue.

You'll find Key Numbers throughout this issue. To get more information, just circle the Numbers of the products you're interested in on one of the Reader Cards below. Fill out the mailing information — detach the Card — and put it in the mail. Product literature will be sent to you free and without obligation by the manufacturer.

Here's a check list of types of information available quickly . . . free of charge

- **PRODUCTS ADVERTISED**

The Advertisers' Index on the opposite page briefly describes products advertised and lists Key Numbers.

- **NEW SAFETY EQUIPMENT**

Check this special section for newly introduced or improved safety products and services that you want to know more about.

- **PRODUCT LITERATURE**

Following the New Safety Equipment Section you'll find a listing of catalogs, special reports, other printed material that is valuable as reference data.

IMPORTANT

Be sure to print your name, title, company and address legibly on Reader Card before mailing.

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MAY 1961

use before July 31

1	16	31	46	61	76	91	106	121	136	151	166	181	196	211	226	241	256	271	286	301	316
2	17	32	47	62	77	92	107	122	137	152	167	182	197	212	227	242	257	272	287	302	317
3	18	33	48	63	78	93	108	123	138	153	168	183	198	213	228	243	258	273	288	303	318
4	19	34	49	64	79	94	109	124	139	154	169	184	199	214	229	244	259	274	289	304	319
5	20	35	50	65	80	95	110	125	140	155	170	185	200	215	230	245	260	275	290	305	320
6	21	36	51	66	81	96	111	126	141	156	171	186	201	216	231	246	261	276	291	306	321
7	22	37	52	67	82	97	112	127	142	157	172	187	202	217	232	247	262	277	292	307	322
8	23	38	53	68	83	98	113	128	143	158	173	188	203	218	233	248	263	278	293	308	323
9	24	39	54	69	84	99	114	129	144	159	174	189	204	219	234	249	264	279	294	309	324
10	25	40	55	70	85	100	115	130	145	160	175	190	205	220	235	250	265	280	295	310	325
11	26	41	56	71	86	101	116	131	146	161	176	191	206	221	236	251	266	281	296	311	326
12	27	42	57	72	87	102	117	132	147	162	177	192	207	222	237	252	267	282	297	312	327
13	28	43	58	73	88	103	118	133	148	163	178	193	208	223	238	253	268	283	298	313	328
14	29	44	59	74	89	104	119	134	149	164	179	194	209	224	239	254	269	284	299	314	329
15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	315	330

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COMPANY_____

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13	28	43	58	73	88	103	118	133	148	163	178	193	208	223	238	253	268	283	298	313	328
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. . . your guide to products for your plant safety program

Within the pages of National Safety News you'll find more safety products advertised than in any other safety magazine.

To get more information about any product advertised use one of the Reader Cards below. Just circle the Key Numbers of the products you'd like more information about and drop the Card into the mail —no postage necessary (if mailed in U.S.A.). Product literature sent free without obligation.

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MS-301

Printed in U.S.A.

Safemaster (F53

Flexi-Fit (F9900) with side shields

Two new Durasafe models–

For greater protection . . . easier acceptance

Here are two new Durasafe safety glasses that will help make your eye safety programs *work*. Both give workers the type of protection they need, want, and will wear. The plastic and metal Safemaster (F5300) was designed for safety Rx as well as plano lenses. The Flexi-Fit (F9900), which fits 85-90% of plano users, helps you cut plant stocks of sizes, is also available for Rx. Both models give you major Durasafe features.

For better wearer acceptance and greater eye safety, check these durable new Durasafe models. Call your AO Safety Products Representative, or write for bulletin S-1524.

Only AO Durasafe gives you:

Sturdy frames—engineered for industrial use and exposures.

Wider temples, endpieces—stronger, more comfortable, better appearance.

7-Barrel hinges—40% stronger at temple's most vulnerable spot.

Duragrip screw construction—temples stay tight, screws cannot fall out.

Cool side shields—nonreflecting wire mesh.

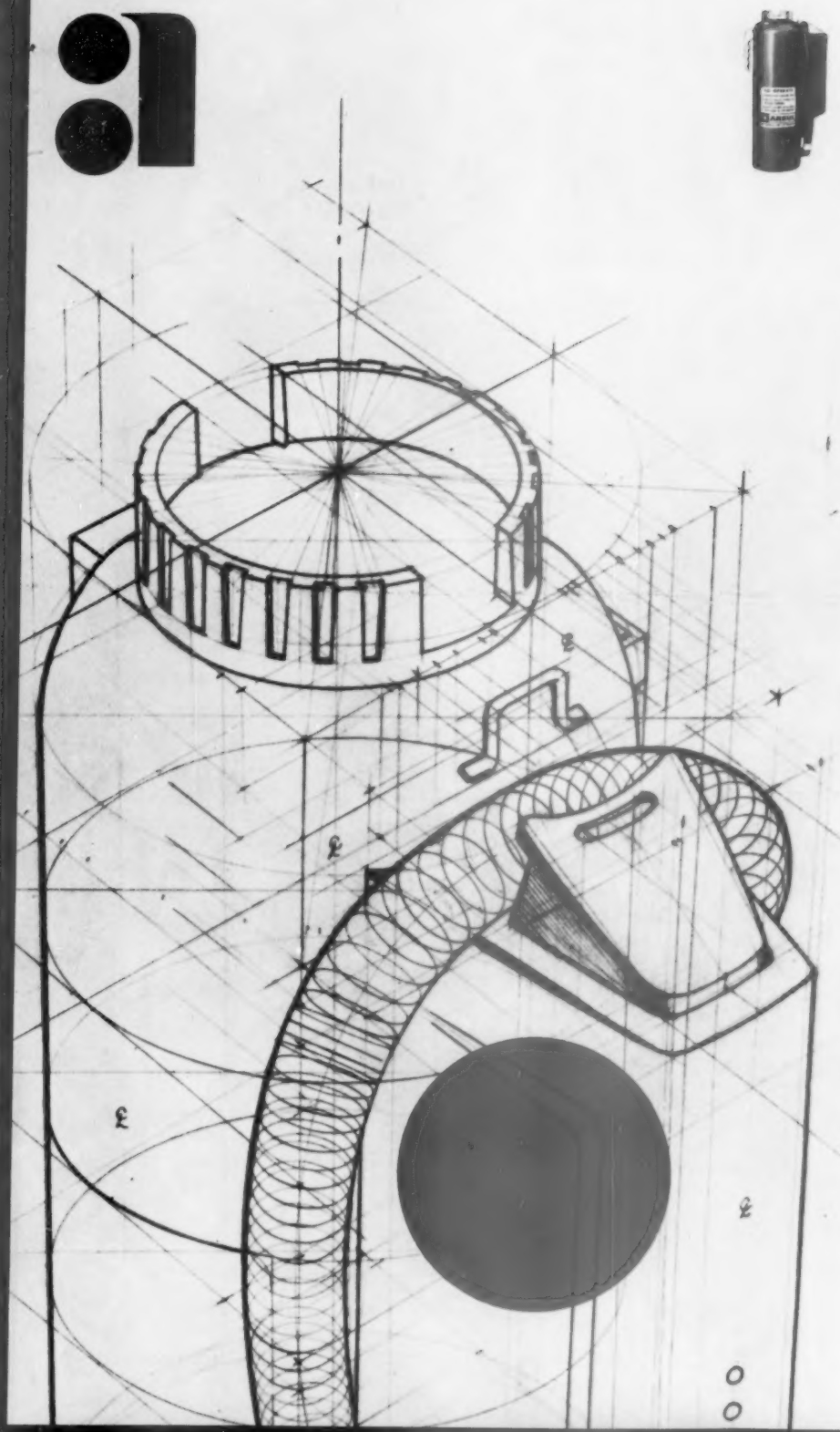
Choice of temples—wide plastic comfort cable, metal core plastic spatula, or aluminum with plastic spatula tip.

Your Surest Protection . . . AO SURE-GUARD Glasses

American Optical
COMPANY

SAFETY PRODUCTS DIVISION • SOUTHBRIDGE, MASSACHUSETTS

CIRCLE 3 ON READER CARD



Ansul fire extinguishers cost more...they also put out more fire, last longer and are far less expensive to maintain.

● On 15 important counts Ansul hand extinguishers exceed the UL Safety Standards by anywhere from 20% to 333%. These extinguishers are built for men who look at PRICE but understand VALUE. Perhaps that's why those plants with the most dangerous fire hazards... those men who know fire protection best rely on ANSUL.

Your local ANSUL MAN (he's listed in the "Yellow Pages") would welcome the opportunity to consult with you on your fire protection problems. He'd also like to prove why dollar for dollar, Ansul is your best buy. If you'd like to have our latest catalog, describing in detail the complete Ansul line of hand portable dry chemical, carbon dioxide and water extinguishers ...wheeled and stationary units... mobile equipment and automatic systems, write Ansul Chemical Company, Marinette, Wisconsin.

ANSUL

CIRCLE 2 ON READER CARD